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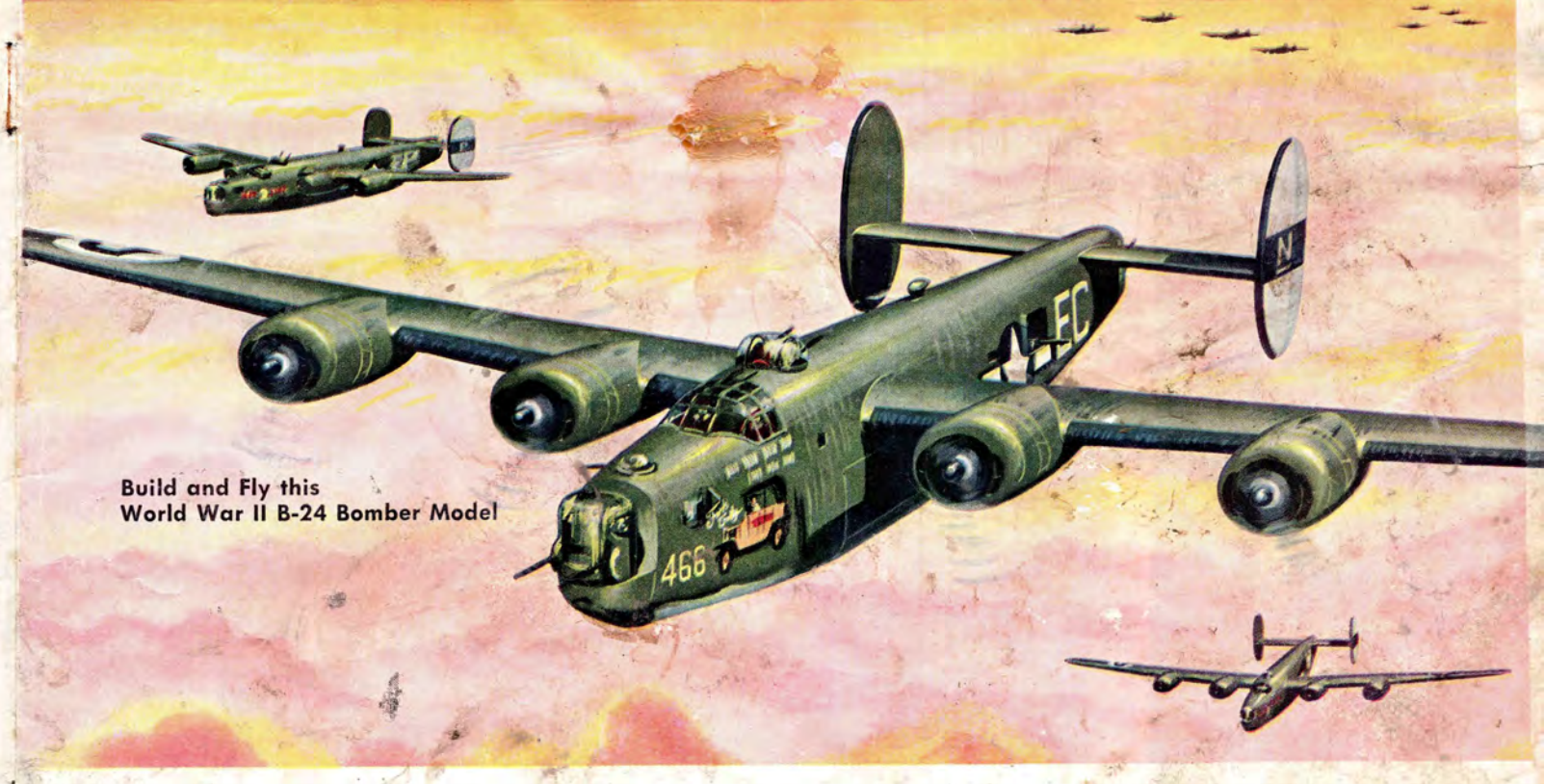

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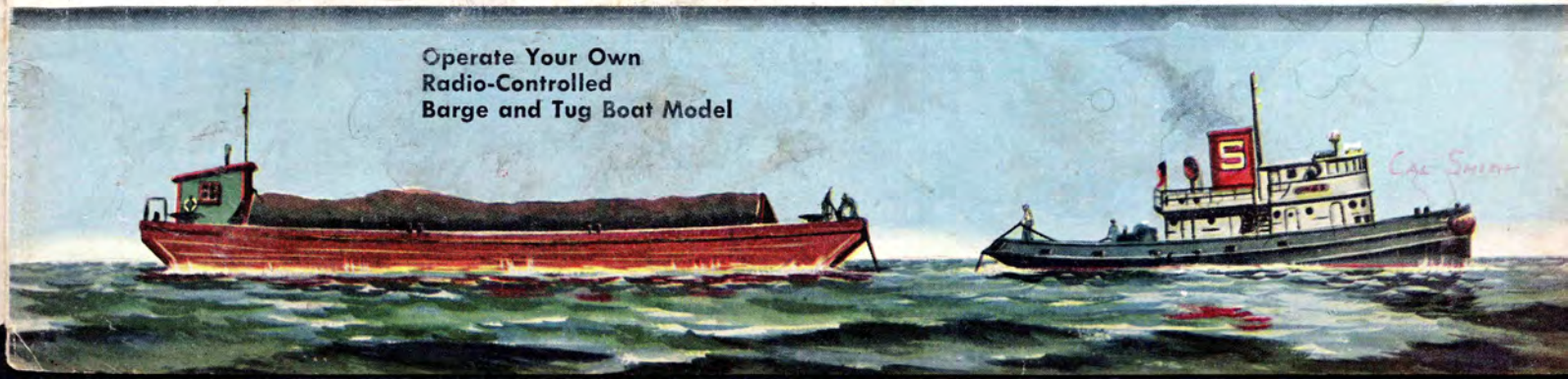

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Speaking of HOBBIES

All communications to the editors should be addressed to 304 East 45th St., New York 17, N. Y.

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Two-year project was that 10-inch reflecting mirror telescope made by 23-year-old Donald Rosenfield of Chicago. He devised a system to keep it true to the rotation of the earth. A member of the Burnham Astronomical Society, Don displayed this telescope at the Chicago Coliseum.

Ever go to a modelplane contest and note some of those weird helmets? John Cronican of Yonkers, N. Y., has been "constructing" his masterpiece for over a year—says it still isn't finished and that he has quite a way to go. Chapeau is now so weighted down John can't wear it for too long a spell. Anemometer whirls around briskly, checkered flags wave in the breeze, old radio tubes and Scrabble letters around brim add to the general confusion.

Girl bites Robot? Not quite—that's Marge Kennedy (left) sampling a pretzel offered her by the mechanical pretzel man. At the controls of T.M.P.M. is 13-year-old Sherwood "Woody" Fuerher of Cranston, R. I. Woody built the 6-foot, 95-pound robot from pretzel cans, oil caps, spring coils and wood. Young Fuerher ought to go far in radio-controlled modeling!

Something rather new in hobby shop operation and location is Rich's Hobbytowne, Inc., located on a main New Jersey Highway in Parsippany about 25 minutes driving time from the famous George Washington Bridge and the Hudson River. Instead of setting up his new hobby establishment in the heart of some community, Richard H. ("Rich") Palmer wanted to place it so he could provide flying facilities for air-modelers, track facilities for race car fans and eventually a pond for the boat boys. Says Rich: "For many years I have been interested in different projects in the hobby field as a consumer or customer. While in college in 1948 I started a hobby shop on a small scale to earn some spending money. It was located on an airport in Greenville, N. C., where I also worked. In our spare time, we used to fly model planes beside our little shack. At that time, I realized that the average person doesn't have a chance to enjoy the fun of model airplane flying because there is no place to go. It was my first experience at flying the things, and I had been building them for years. When I finished college in '52 and moved back north, I rented a small store and attempted to run this store as a sideline. It became too interesting a project so 10 months ago I quit my job and scraped up what cash I could to increase my inventory and make this a larger project. For two years I have been driving up and down Route 46, eyeing a nice level piece of ground, wondering how flying fields would make out. Two weeks ago a fellow finished putting a new building on this place. We contacted him and before I know it, it was mine. We have access to loads of space which has to be fixed up slightly. The younger kids can bring their planes to us and we can help them to get rolling and when they invest their money in our merchandise they won't have to put it away and give up because they can't make it go. I believe an awful lot of potential modelers and flyers get lost before they start due to no instruction or improper instruction. I hope to acquire enough space eventually to provide room for meets etc. Of course this is all a dream of the future but we all believe around here that this is a move that will start us and the industry rolling. We are doing this on a small capital and so we won't be able to make a big splash as we like to when we open. I had better clarify myself on we and I. I own the business myself. I refer to the business and myself as we. However, in order to raise capital I have had to incorporate and raise money via selling stock. Here is a picture of the store. We are waiting for the grass to come up before getting shots of the outside. Yesterday we had four flying fields in operation at one time. We are making some headway. We are also going to add another feature which should help us, and that is, I am lighting two of the fields for night flying. We have already tried it with makeshift lights and have been flying most every evening."

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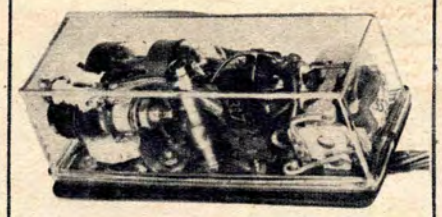

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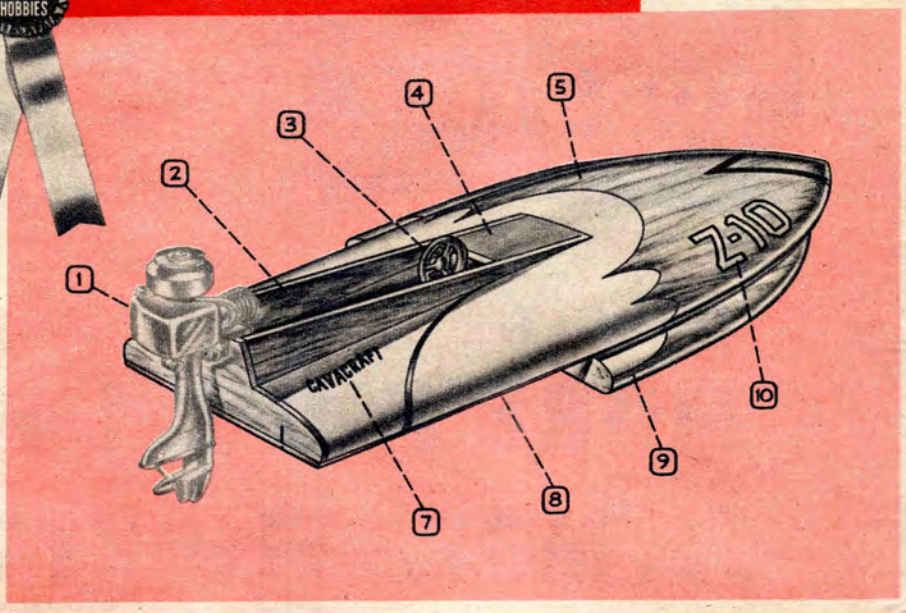
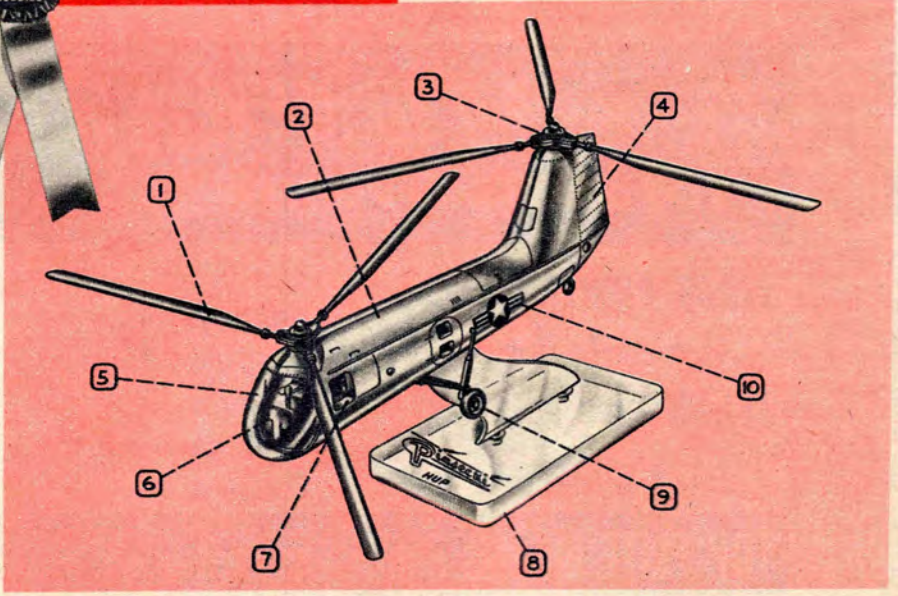


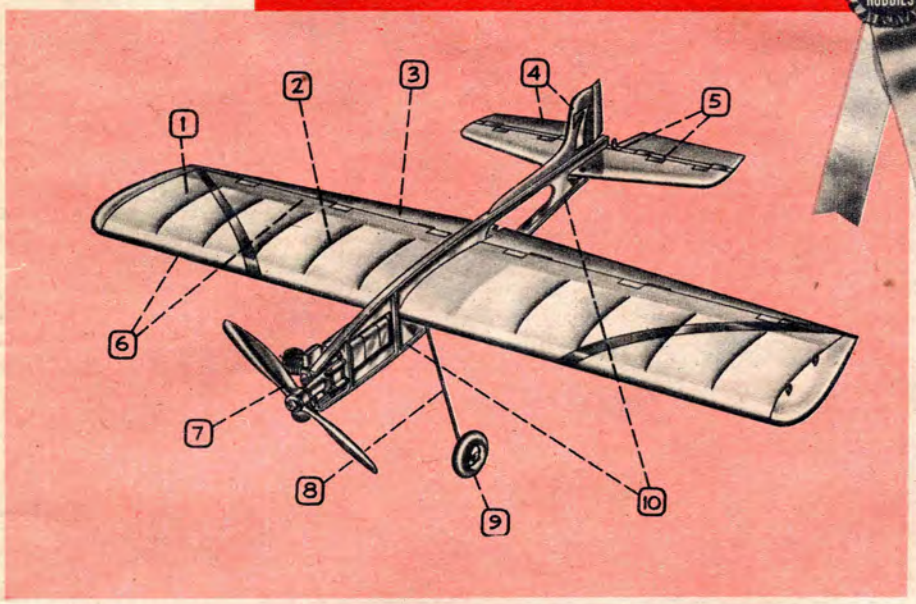
■ The Philadelphia firm of Cavacraft has caught the authentic appearance of man-size racing hydroplane boats with its 14 inch model. Designed for engines such as the Atwood or Allyn, Cavacraft's kit #E-4 has a beam of 6 inches. Parts are ready for gluing together. 1) Recommended power: outboard model gas engine (not included); 2) shaped pine motor supports; 3) die-cut plywood steering wheel; 4) pine cowl piece; 5) pre-shaped, sanded balsa hull; 6) die-cut plywood transom; 7) decal trademark; 8) shaped hull bottom; 9) shaped sponsons; 10) decal numerals.

■ Featuring even scale riveting Helicopters for Industry, Inc., Piasecki "HUP" tandem-rotor 'copter is a masterpiece in minute details. 1) Plastic (polystyrene) scale rotor blades; 2) plastic fuselage molded in halves; 3) hub assemblies with shafts (movable); 4) full rivet detail molded in surfaces; 5) formed clear nose canopy; 6) scale instrument panel, seats, control columns; 7) open windows molded in body; 8) two-piece clear plastic display pedestal; 9) fully detailed landing gear assemblies; 10) authentic colored decal insignia.

HFI's "HUP"



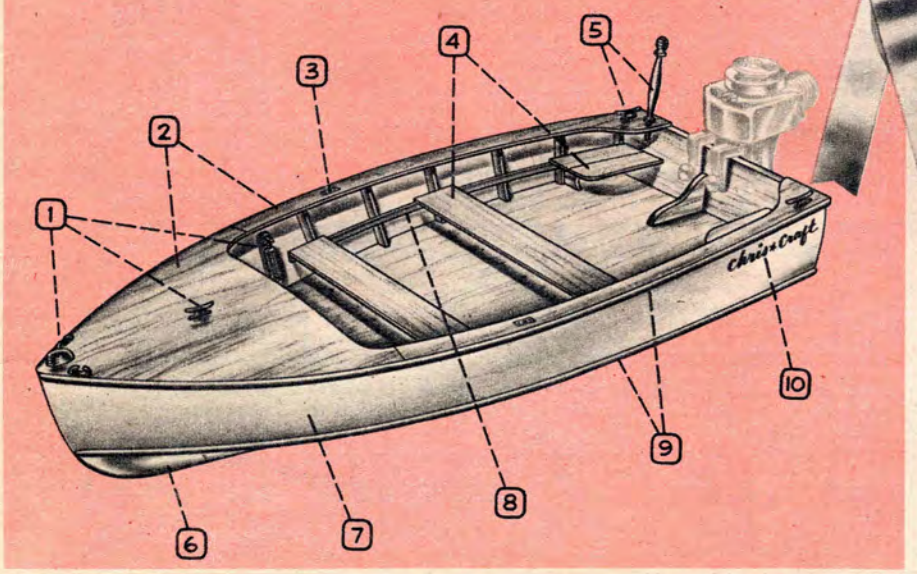
Consolidated "MPC-7"

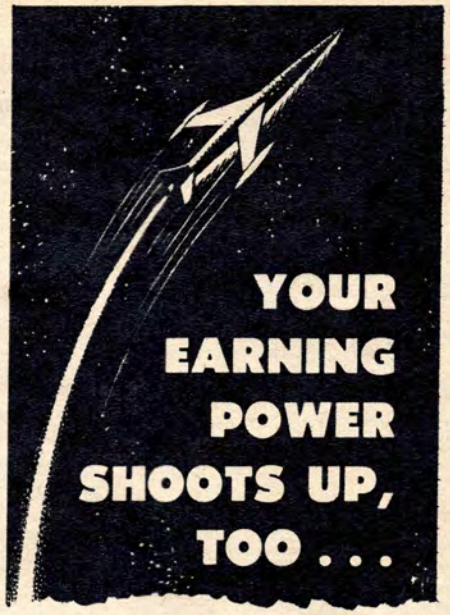


■ Practically indestructible is the magnesium profile fuselage of Consolidated's MPC stunt and combat model. Spans 39 inches. 1) Silkspan wing covering; 2) die-cut balsa wing ribs; 3) die-cut flaps (control optional); 4) die-cut balsa tail parts; 5) elevator horn, hinge material supplied; 6) fully shaped leading, trailing edges; 7) engines of .19 to .35 cu. in. disp. recommended; 8) formed steel landing gear; 9) wheels not supplied in kit; 10) finished magnesium profile fuselage with flanges for mounting wing, tail, gear, tank and engine.

■ First of an extensive series of prefabricated boat model kits is Dyna-Model Products' 1-inch-to-foot Chris-Craft DeLuxe Outboard Runabout. 1) Die-cast running light, chocks, cleats, fire extinguisher, anchor, etc.; 2) die-cut mahogany fore deck, side decks; 3) die-cast oar locks and sockets; 4) die-cut mahogany veneer seats; 5) die-cast cleats, running light; 6) fully shaped balsa bottom; 7) balsa hull sides, fully carved and shaped; 8) balsa side frames, seat rails; 9) balsa fender rail and spray rail; 10) decal Chris-Craft emblem.

Dyna-Model "Runabout"





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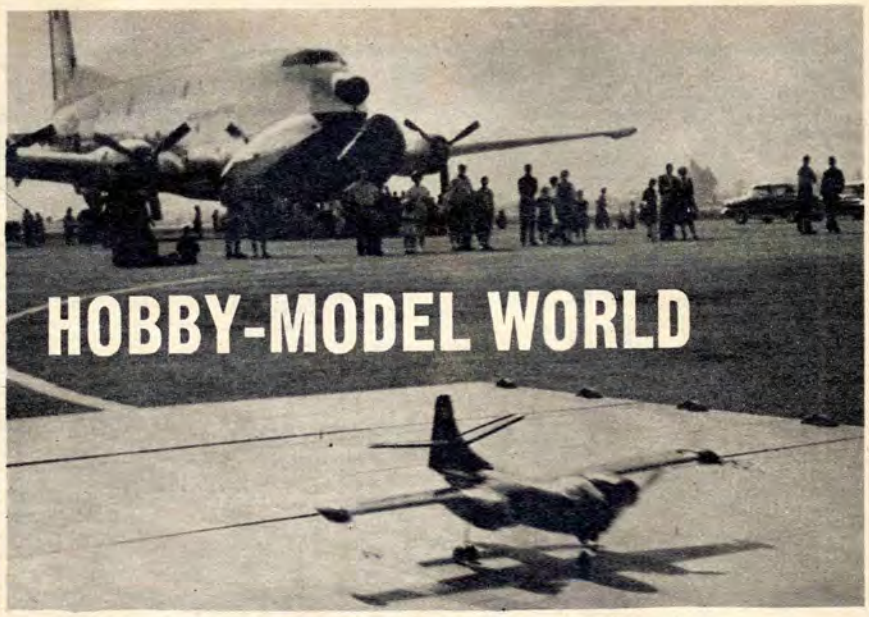

HOBBY-MODEL WORLD

Model Builders Make Good. First scholarship recipient under new $16,000 scholarship grant to Philadelphia's Drexel Institute of Technology was air-modeler William Thayer, Baltimore Polytechnic Institute senior. Bill qualified as winner in competition with 600 candidates. The fund was the gift of G. M. Bunker, president, and J. B. Wharton, Jr., vice president respectively, of Martin Aircraft.

In announcing the scholarship fund, Mr. Bunker stressed the importance of obtaining well-trained and enthusiastic young engineers for the aviation industry. The two Martin officials have established similar scholarships at Georgia Institute of Technology and Massachusetts Institute of Technology.

Another ex-modeler, Charles H. Kaman, president of the Kaman Aircraft Corp., helicopter manufacturers at Bloomfield, Conn., has been awarded the Connecticut Junior Chamber of Commerce's "Distinguished Service Award." CHK, former national air-model record holder, was elected for the award in recognition of "his outstanding contribution to Connecticut in founding and guiding what has become one of Connecticut's leading industrial enterprises."

Air Fans Take Note. The Experimental Aircraft Association announces its Second Annual International Fly-In and Convention for August 7 and 8 in conjunction with the 4th annual National Air Pageant in Milwaukee. What a chance for aviation shutterbugs! All types of odd and interesting aircraft are sure to show up—lots of home-builts and modified jobs.

E.A.A., which has its headquarters in Milwaukee, expects at least 75 home-built aircraft to assemble at the Curtiss-Wright airport. This armada will include racers, sports aircraft, modified conventional types and antique World War I airplanes. (A midget airplane race is scheduled.)

Prizes will be awarded on the basis of workmanship and design originality in the various categories. In addition, awards will go to the person flying his home-built airplane from the most distant point. Aviation enthusiasts can get additional information on the exhibition from L. J. Kohn, 4952-A N. 54th Street, Milwaukee 16, Wis.

The Paper Must Go On. Ocie Randall in Fresno, Calif., edits and mimeographs the "Fresno Model News"—the West's oldest model paper. Even though he injured one hand when the wind slammed hic car door shut on it, Ocie continued to type his stencils, run off the mimeograph, address and mail his newssheet! Stout fellow! We're delighted to record his never-say-die spirit and one handed ability and to report he's nearly recovered.

Real Blast! That's what we got and that's what we expected from the International Model Power Boat Association and its prexy Charles Baxmann. Seems that something besides Doolings are used in model racing boats. Stock McCoy .60's for instance. Last August, writes CB, a new world record in Class E was set at the Toronto International meet by Ralph Richards of Philadelphia with a standard Mac .60—84.50 mph! Charlie expects at least 30 new McCoy .60-equipped speedsters will show up this summer.

For membership information, et al., write the I.M.P.B.A. at 2991 Garland Ave., Detroit 14, Mich.

International Association of Automotive Modelers Ever hear of this organization? Small, but select. It's for builders of miniature cars. Secretary is Phillip H. Jensen, 170 Lancaster St., Cohoes, N. Y., who provided data on the group.

Club dues are $1 per year to help defray the cost of printing and mailing the by-monthly I.A.A.M. Bulletin. This is a 6-to-8 page nicely multigraphed newsletter containing general information on the subject of automodeling, construction kinks, where-to-buy-it information, book and kit reviews and similar material. It also keeps the members informed of the latest additions to the plans and parts which the Association endeavors to provide for its members in ever-increasing quantities and variety.

Rules governing the association and the work of its members are brief and understandable: 1) models are built of antique, classic, sports or racing automobiles; 2) models must be built to scale, but any scale may be chosen; 3) commercial kits may be used as a basis for models, but they should be modified and improved to the best of the individual's ability; 4) members are expected to share their know-how with others through the pages of the Bulletin. Simple, hey?

If you want (*Continued on page* 85)

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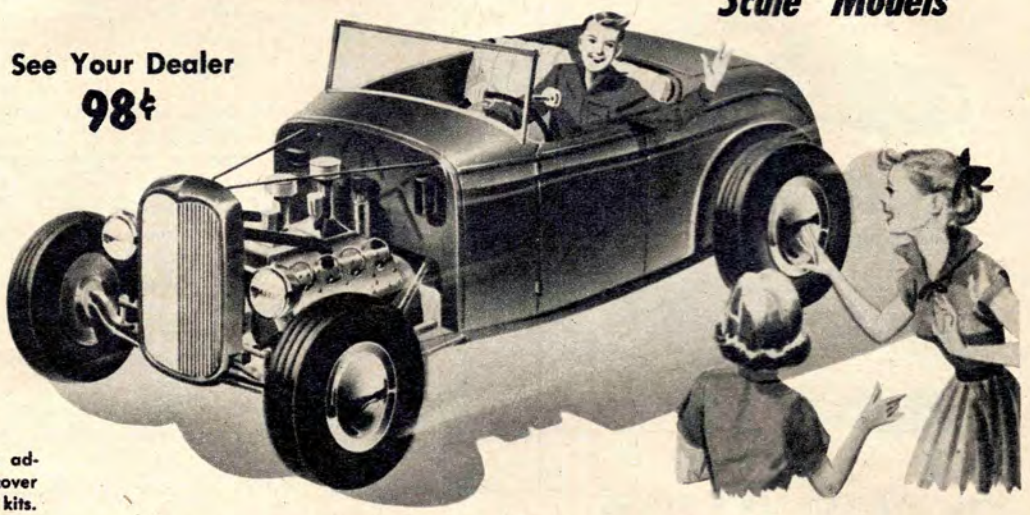

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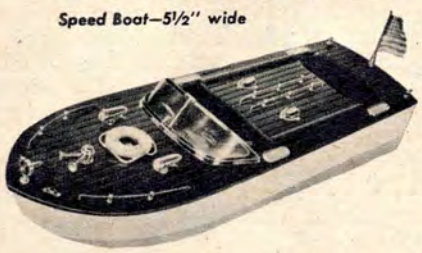

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AQUA-tivities

Model boat racing season now in full swing!
Data on Eastern States Hydro Championships

■ Like all other modelers, the boat boys have a full schedule of races set up; some will already have been run off by the time this reaches you. There are many more races to come, though, and they will be held in many parts of the country, so look over our Hobby Calendar for the events nearest you, and drop around to see the fun—or better yet, build a boat and join in!

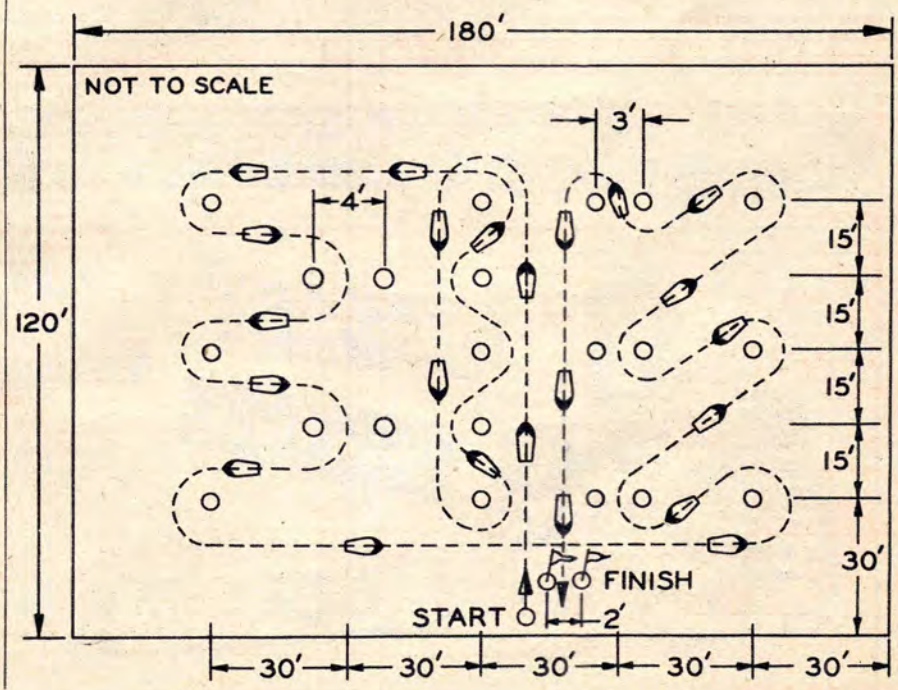
One big hydro event that will take in a wide variety of modeling interests is the 1st Annual Eastern States Hydro Championships, August 1, to be sponsored by the Bristol, Pa., Aeromodelers and held at Silver Lake located on U.S. Route 13, at Bristol. There will be both tethered and non-tethered speed racing, controline stunt with R.O.W. planes, a special free-for-all race for boats with up to .099 power, and two R/C events—one for model seaplanes, where all rules will be the same as the regular AMA R/C Precision Flight rules with the added requirement that all planes must take off and land on the water.

The other R/C event is for boats, and there are no restrictions for weight or size (rules say you can use any sort of power except jets and nuclear reactors!) The boats must run an obstacle course, reproduced here, in eight minutes from the time they are launched. Contestants are allowed four minutes to start their engines, put the boat in the water, and check out the equipment. The course is one that was first used—to the best of our knowledge—at a meet held by the A-V-A-Toros at Riverside, Calif., last March. Basic scoring is on a point system, points being given for each obstacle passed, and deducted for failing to pass between markers, hitting markers, straying outside the 120′ x 180″ course area, etc.

Needless to say, you have to go over the course at a fair speed, or you will not be able to complete the whole thing in the 8 min. allowed, and will thus lose points this way. Each entrant is allowed extra points for one special maneuver to be done after he completes the regular course. This allows a lot of leeway; you can blow a horn, drop an anchor, launch a dingy, back up the boat, etc, etc. Just use your imagination here.

Tethered speed boats will run under the rules of the I.M.P.B.A., but the non-tethered speed event is something new. Here the boats must travel a circular course outside two pylons, one of which is 15′ from shore; the other one is 35′ farther out, so the boat has to circle a little wider than 35′, but if it goes too wide it will hit the shore. The wider the circle, of course, the farther it has to travel—an undesirable penalty, since scoring is based upon time for one lap around the pylons. Contestants are allowed three attempts and one dunk (!), and there are two age classes—up to and including 15, and 16 and over. Not much is said of the "Across the Lake Free-for-All," but rules will be announced the

Think your radio-controlled boat model could navigate this tough course in under 8 minutes? This one will be laid out at Silver Lake, Bristol, Pa., for the Eastern Hydro Championships.



day of the contest. Contest is under direction of Clarence Wells, Sinclair Ross, and Al Abrams (who sent us the dope), entry fee is 50¢ per event. More info may be had from Al at 1031 Pond St., Bristol, Pa.

First answer to the note on p. 17, June 1954 issue of ATH, re the International Model Power Boat Assoc. came from Al Abrams, who noted that there are affiliated clubs in California, New York City, Philadelphia, Baltimore, Chicago, St. Louis, and Detroit, plus others in Canada, and South Africa. We believe there are also groups in close touch with the IMPBA in London and Paris. So it really *is* a National and International organization. More confirmation on this comes from Bob Graham, who sent us a copy of the May issue of "Model Speed Boat News" which he edits, and from which we reprint the following notes, or the gist thereof:

The Eastern Model Power Boat Circuit decided, at a meeting and dinner held in Philadelphia, to sponsor a two-day race on Aug. 7th and 8th, at Concourse Lake, Fairmount Park, Philly. High Point Trophy of the New York Model Knights (for 1953) was won by Bob Graham; Bob is well known for his prowess with the speed boats, but he is now building a steam-powered stern wheel paddle-wheeler. The Detroit MPBA is sponsoring a new class of speed boats to get the youngsters interested in boat racing; boats must use the outboard type model engines.

This sounds good to us, and we will get more dope on it, so that other clubs may try it. Bob also sent a list of current IMPBA speed boat records: Class A Steam—M. Succarde (Detroit): 68.18 mph. Class A Gas (over 30 cc)—M. Biederman (New York): 69.23. Class B (30 cc)—Chas. Watkins (Chicago): 81.81. Class C—(15 cc): Walt MacWilliams (Philadelphia): 75.00. Class D (10 cc)—Bob Palmer (Chicago): 78.94. Class E (stock 10 cc)—Ralph Richards (Philadelphia): 84.50. Class F (5 cc)—Chas. Baxmann (Detroit): 63.82. Who sez the little ones can't go!!?

It probably won't be long before there will be a whole rash of new kits for the outboard motors—both electric and glow types. We know of several on the way already. Meantime, modelers who want to make boats to real scale proportions might look in some of the mags catering to the large boat boys; f'instance, the April issue of "Outboard" has a neat cabin design that could be worked up into a slick model. Nice lines, simple construction and should offer a good turn of speed with the model gassie outboards.

Speaking of outboard models, who is going to be the first to send us a good pic of their "Obie" model? With or without R/C, let's see how *your* copy came out.

During a visit to the Washington area not long ago we saw a little R/C boat built by Joe Tolson of the DC/RC club, that shows how much equipment you can pile in a small hull, and still get good operation. Joe used the Sterling "Higgins 26' Express Cruiser" kit, which makes a ship only 15" long. Yet he had it crammed with a Good 3-tube A.F. tone receiver, and used medium flashlight batts for the electric motor. Receiver was sealed in a (*Continued on page* 72)

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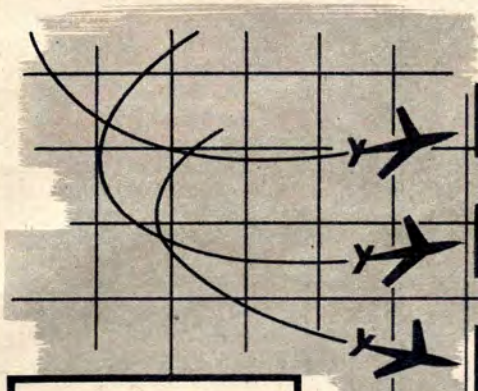

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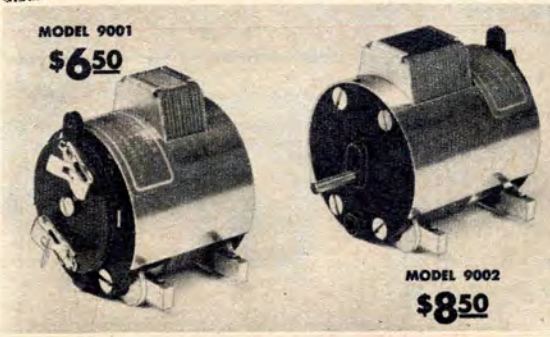

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HOBBY BOOKSHELF

Conducted by
WILLIAM J. LOWRY

Radio Control of Model Aircraft by G. Sommerhoff is probably the most complete book on the subject to make its appearance anywhere. Mr. McEntee has covered this volume in his "Everything Under Control" column so we'll just say this printed-in-England book is available from Gull Model Airplane Co., 10 E. Overlea Ave., Baltimore 6, Md.—$3.98.

Sport and Racing Cars by Raymond F. Yates and Brock W. Yates (Harper and Brothers, New York, N. Y., 116 pages—$2.00) is written for anyone who has ever stopped to look at a sleek sports car going down the road.

The first chapter entitled "The Hot Rod Story" should be read by every automotive enthusiast in his teens as well as by his parents. Here the authors follow the history of the hot rod from its rather bad beginning to the controlled competition under rules of the National Hot Rod Association. Always stressed are the rigid operating rules, safety checks and technical inspections.

The chapters on sport cars with excellent illustrations make one's mouth water and of unusual interest are the preparations and requirements for the entries in the Grand Prix and Indianapolis races. The explanation of racing classes and the meanings of the flags used in races will provide the reader with enough racing know-how to become an enthusiastic spectator if not a driver.

Words in Space by Martin Caidin (Henry Holt and Company, 383 Madison Ave., New York 17, N. Y., 212 pages —$4.95) is one of the few books which has comprehensively gone into the problems of space travel. This is not a space fiction story but a factual report of the problems faced in space survival both from a mechanical and physical angle.

In February 1949 the two-stage rocket V2/WAC-Corporal was successfully fired to attain the record altitude of 252 miles above the earth. This exploratory space travel has presented the scientists with the fact that rockets can be made to travel, not at first to the Moon, but to become orbital satellites swinging about our planet once every 96 minutes or 15 times a day, transmitting back to earth invaluable data.

The book goes on to describe, not too technically, the types of rockets and speeds that will be required.

The problems faced in the construction of space stations in the satellite orbit and then using them for jumping off sites for further exploratory travel to the moon and other planets are well detailed and graphically illustrated.

Mr. Wizard's Science Secrets (Popular Mechanics Press, 200 East Ontario Street, Chicago 11, Ill., 263 pages—$3.00) is authored by television's Mr. Wizard, Don Herbert, so you can perform the best of his experiments in science, and without difficulty.

Here is a book filled with simple, interesting experiments, the materials required are found in all homes and the directions are simple and explicit; what's more each experiment takes on an appearance of magic. Problems such as blowing up a balloon in a bottle without actually blowing into it, causing water from the faucet to bend mysteriously, making moth balls dance are but a few of over 150 exciting experiments. In each case, the law of nature is cited.

Many hours of fun and entertainment will be realized by your family, friends and yourself in doing the "parlor magic" experiments in this volume.

Sundials by R. Newton and Margaret L. Mayall (Charles T. Branford Company, Boston, Mass., 190 pages—$3.75) is written for those who wish to know as well as make and use sundials. Directions for making sundials without laborious mathematical calculations are included. A few ordinary drawing materials and tools and almost any flat surface in any position are all that is necessary for a sundial which will keep accurate time —even with Daylight Saving!

This book is an ideal reference book. We suggest that anyone interested in building sundials request their librarian have this volume ordered.

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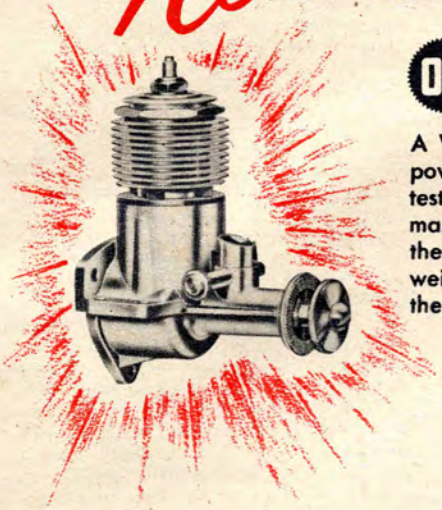

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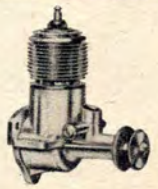

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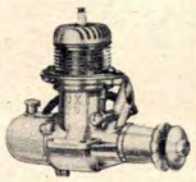

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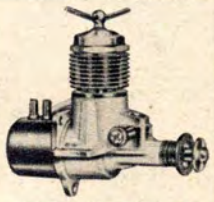

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Everything Under Control

News, Views, Comment on Radio Control Planes, Boats, Vehicles by Howard McEntee

Three Controls On One Channel. You say there is nothing special about this—it is being done all the time? Right. But here is a simple way (Fig. 1) to do it with any receiver, and using escapements. System has been flown in a modified Bootstraps with Cub .14 power, and was devised by Jerry Pullen (377 W. 8th Ave., Eugene Ore.). Heart of the rig is a Compound escapement that has had an extra set of contacts added to it. These are set to close for just an instant, shortly after the rotor leaves the neutral position. Jerry used a couple of strips of spring brass; remember, you want them to give just a flick of current —not to hold closed for any length of time.

The compound is linked to the rudder in the usual manner, and the normal built-in contacts on the Compound work an elevator escapement. The new contacts operate a motor escapement like this; if you give a fast enough pulse the receiver relay will hit contact A long enough to "unlatch" the compound, then almost instantly snap back to the no-signal position—contact B then being closed. The added contacts thus have a chance to shoot a pulse of current to the motor escapement through contact B (the escapement rotor lags somewhat behind your one quick pulse, due to the speed governor). If you pulse and hold, as is normally done for rudder movement, the rotor closes the new contacts but motor escapement does not operate, since the relay armature stays on contact A.

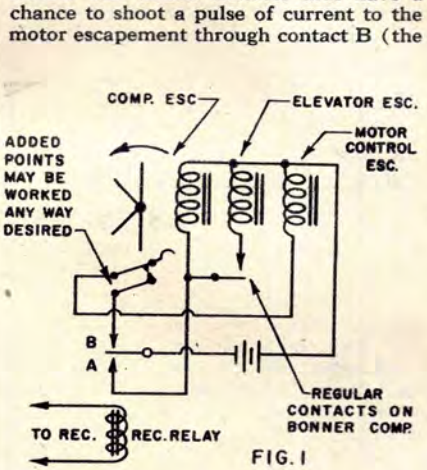


FIG. 1

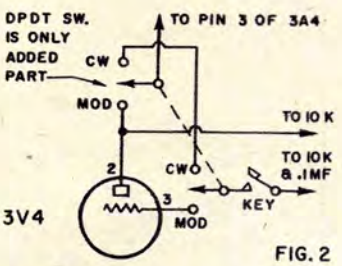


FIG. 2

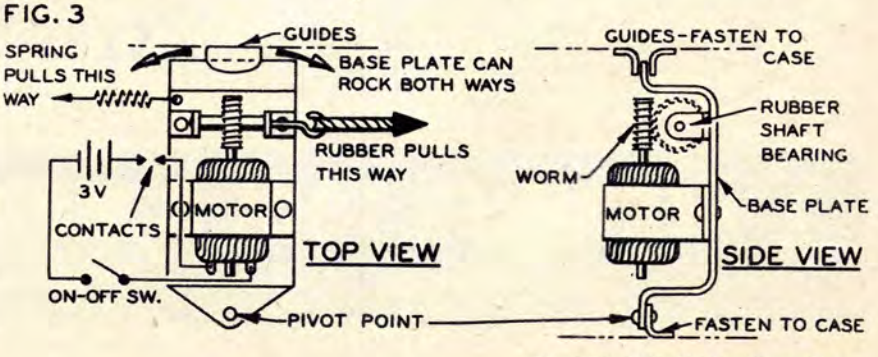
A member of the D.C./R.C. Club wanted to use his Babcock BCT-2 transmitter for regular carrier-operated R/C receivers; necessary modification was figured out by Bill Saks (6811 Fairfax Rd., Bethesda 14, Md.), and we show here (Fig. 2) the circuits affected. No other changes are required in the transmitter, and no parts need be added except the DPDT switch. In C.W. position, transmitter sends out carrier-only pulses as you key; in Mod. position it works with constant carrier and keyed audio tone, exactly as before the additions.

Many flyers have run out of escapement rubber turns while flying; others have passed up certain escapement-operated control systems that required an abnormally high number of rubber turns. Arrangement in Fig. 3 shows a simple electric winder that keeps the rubber supplied with plenty of turns, no matter what control arrangement you use. Hi-Drive motor and pair of bearings to hold gear shaft and rubber hook are mounted on pivoted metal plate, which also has one contact on it; other contact is on case. Hook holds one end of rubber—other end goes to escapement.

When rubber has few turns, spring pulls base plate over till contacts close, energizing motor. As rubber is wound, its tension increases till rubber overcomes spring pull, and the contacts open, stopping motor. When sufficient turns are used up, the cycle repeats. Lt. Russell Low (28 Mitchell Dr., Eatontown, N. J.), who devised this arrangement, says he just closes the motor switch, then flies all day without further worries about how many turns are in the rubber. He has been able to get at least 50-75 flights from a pair of C cells; the whole drive unit was enclosed in a thin plywood case 2½ x 2¼ x 1⅝", the case being fastened firmly to the floor of the fuselage.

Names of several new R/C clubs have reached us. Dick Snyder writes that a rapidly-expanding group is active at the Brogue, Pa., near York; they welcome correspondence from other R/C clubs, would like to hear from R/C modelers in the vicinity. Robert M. Nelson (1435 S. Bidwell Ave., Freeport, Ill.) says that the "Flying Tank Circuits" now have 10 members; (*Continued on page* 58)

FIG. 3



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Effective Area	372"	Category	Radio & Sport
Body Length	35.25"	Ability	Contest & Trainer
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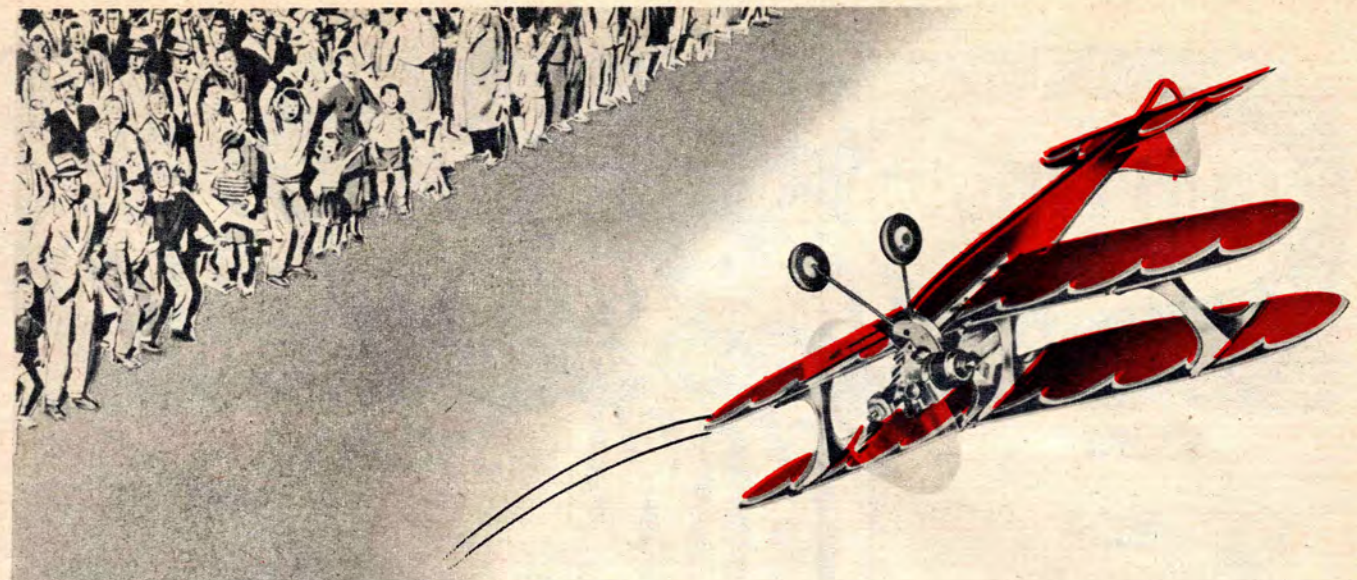

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AIR TRAILS

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For the first time we start off the feature section of this magazine with a model project—in this instance a big, beautiful B-24 Bomber for two or four engine flying. The model tug and its barge are for control by radio.

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Fun with radio control! It's the "Mac 50" detailed on pg. 38

Unusual contest-winning plane from the West Coast. Pg. 32

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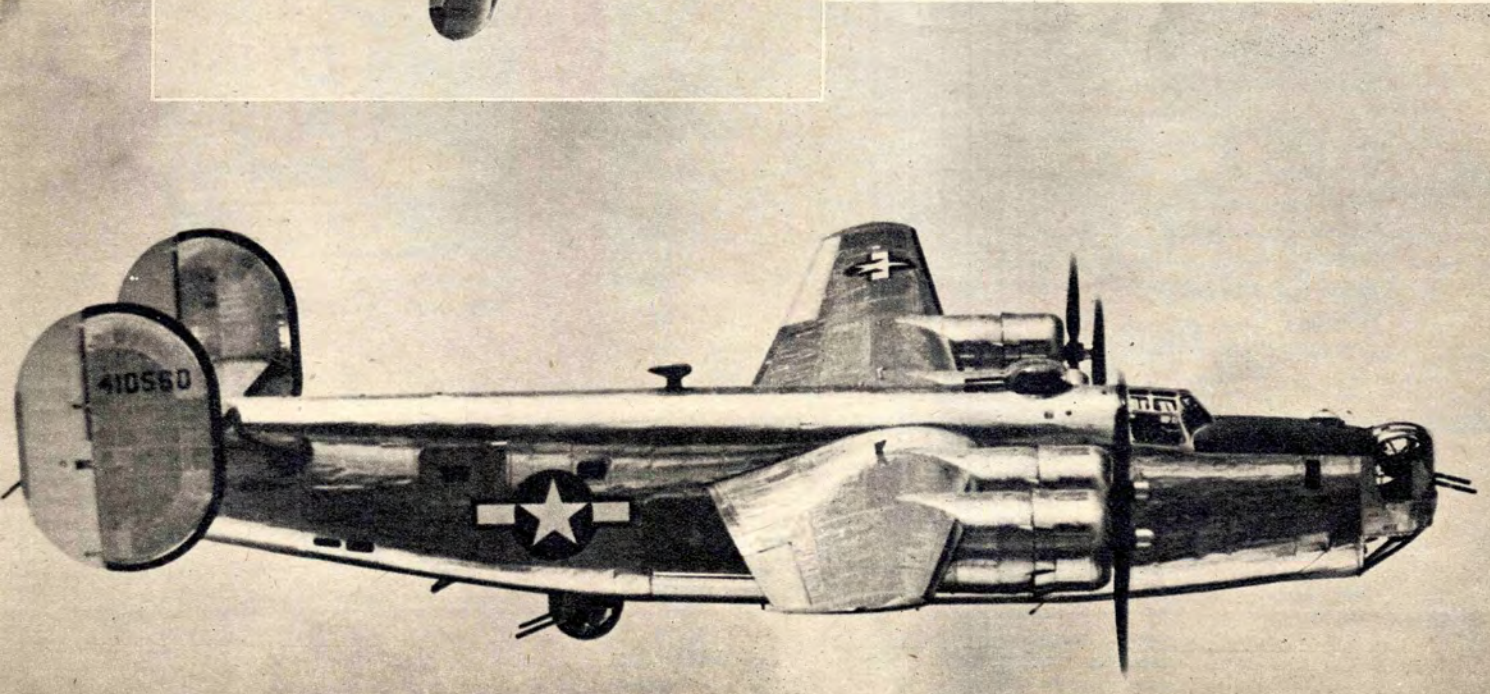
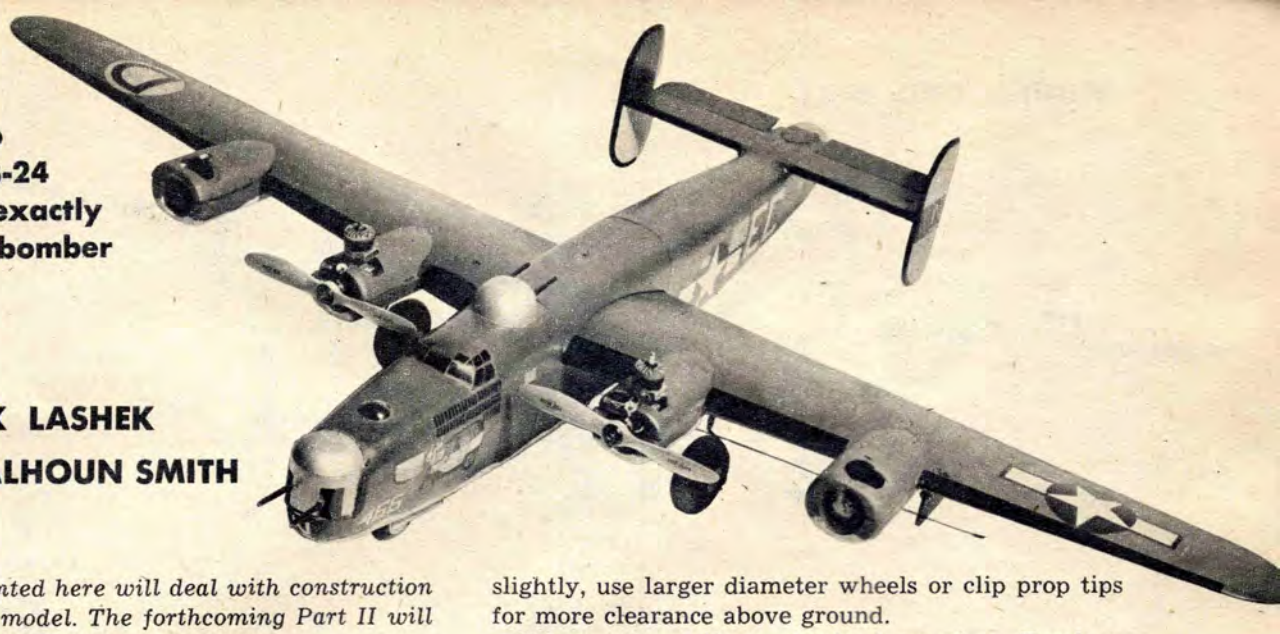
MODEL THIS

B-24

Famous Consolidated World War II Bomber is Spectacular Control Line 2 or 4 Engine Flying Scale



Flying on two engines the B-24 model looks exactly like the real bomber



By FRANK LASHEK
with S. CALHOUN SMITH

Part I presented here will deal with construction of the B-24 model. The forthcoming Part II will explain scale details and markings.

■ World War II scale model fans will welcome this addition to the flight circle. The once mighty Liberator really lived up to its name. Mainstay of the Air Forces in all the operational theaters, the big bomber delivered countless tons of destruction to the enemy.

Like any of the World War II aircraft the B-24 underwent many modifications. The particular version presented here is the B-24H-FO, built by Ford at Willow Run.

While not large by today's standards, the B-24 spanned 110 ft., and this version was 67' 2" long. The power was four Pratt Whitney R-1830-65 engines, supercharged to 1200 hp. Armament consisted of four power turrets with twin .50 cal. guns and single .50 cal. guns in waist positions. Bomb load varied from four to five tons depending upon mission. Crew usually numbered 10 to 12 men. Top speed was 270 mph, service ceiling 36,000 ft. and range with substantial bomb load, 2,600 miles.

This model is no beginner's project and because of its size construction will take some time. It can't be built over a weekend. Scale is ⅝"=1", giving model a span of 5 ft., 8¾ in. Length is 42 in. The model has been flown with various power combinations, and because of nacelle size, the builder has a wide choice of engines. Original power was four ignition Bantams. Performance was good, but weight was quite high so that two or three engine flight wasn't too satisfactory. Later, two glow K&B .19 engines were fitted in inboard nacelles only. By eliminating nearly a pound of ignition system weight, the two glow plug .19's equalled four Bantams.

Weight of model is 4½ lbs. without engines. This is pretty light for such a big job. If the builder can come close to this weight, two .19 engines will be enough power. If the model is heavier, larger engines will be needed such as two .23's or .29's. If four engines are desired, four .19's will be adequate. All-up weight with four .19's should be close to six lbs. The nacelles are large enough to accommodate any of these engines: K&B, Fox, O&R and Cameron. The limiting factor is prop clearance, 9" dia. prop being the largest permitted by scale nacelle location. Ground-prop clearance is only ⅞" with 9" props, so the builder might wish to lengthen landing gear slightly, use larger diameter wheels or clip prop tips for more clearance above ground.

Construction follows standard practices. Fuselage is crutch and former with strip planking. Wing has heavy leading edge and spar with sheet skin, tails are solid sheet. Wing has been made removable from fuselage for ease of transportation. Unless you have a station wagon this feature should be included.

One of the main difficulties with multi-engine models is vibration caused by engines running slightly out of synchronization. Therefore the nacelle construction is quite rugged. Also the nacelles must be joined firmly to the wing structure. You will note the liberal use of hardwood in nacelles and wing.

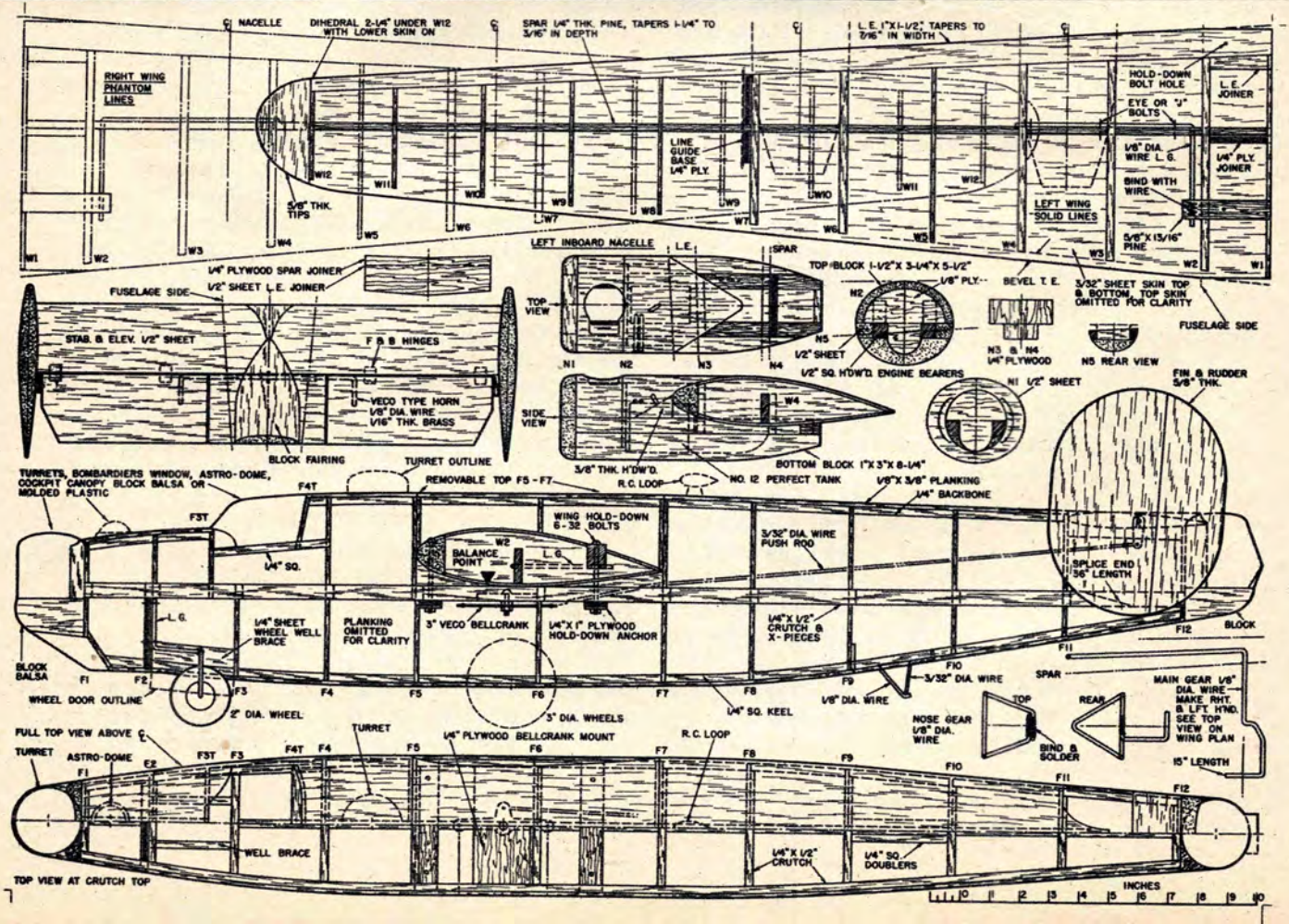
Building can be started with the fuselage. Cut out all formers; these consist of top and bottom halves and where width is greater than 3" sheet, former can be divided at center line for ease of duplication. Lay down crutch and cross-pieces over plan top view and add bottom halves of formers. Nose gear, wing hold-down strips, bellcrank mount and tail skid should be put in place before adding planking. Whole bottom can be planked before removing from work board. Top formers can now be added to the top of crutch. Proceed with planking along sides to maintain rigidity. Leave top open until pushrod is fitted.

Carve stabilizer and elevators to shape, fit horn to elevators and join elevators to stabilizer with hinges. Fit stabilizer to fuselage top and pushrod. Tail can then be laid aside until fuselage planking is completed. It can be joined permanently later. Removable section above wing can be planked along with rest of fuselage. Place a layer of waxed paper between duplicate formers F5 and F7 so that section can be removed easily. Carve lower edge to fit wing curve later when wing is completed. Add ⅜" sheet along crutch top to form wing saddle between formers F5 and F7. Carve to fit wing later. Cement blocks in place below nose and tail turrets next. Carve to shape, blending into fuselage lines. Entire fuselage can be sanded smooth now. Apply two coats of clear dope, sand smooth, then cover fuselage with Silkspan. Fuselage final finishing will be done later.

Wing construction comes next. Cut out ribs first; note that some are of ¼" thick stock. These are at nacelle locations for added strength. The leading edge should be hard balsa; it tapers in width from 1" to 7/16", and from 1 7/16" to ⅜" in depth. The taper can be shaped before adding to structure or after it is cemented in place. Spar is pine or similar hardwood

MODEL THIS B-24

Designer and builder Frank Lashek with the first 4-engine version powered by ignition Bantams. Model more recently has been operating on two glow plug motors (see pg. 21).



for strength at gear and nacelle locations.

Drill spar for landing gear and eye or J bolt attachment, then lay spar down over wing plan and put ribs in place. On rib plans you will notice a "level line" below rib ends. These indicate workboard surface with spar resting thereon. Use lines as guide to blocking up leading edge and trailing edge. Cement ribs in place to leading edge and spar. Plank top surface with structure still down on workboard. Repeat procedure with other wing. When dry the two wing halves can be joined with plywood and block joiners.

Now add pine strip for hold-down and rear landing gear attachment. Bend main gear to shape and push into place along front face of spar. Attach with eye or J bolts. Pine strip at rear should be notched ⅛" deep on bottom surface to receive rear end of landing gear wire. Carve pine flush with top skin, drill vertically and bind with soft wire of about 1/32" dia. Cover binding and also the landing gear wire end with cement.

Lower surface of wing can now be covered with 3/32" sheet, beveling trailing edge of sheets for smooth fit. Add tip blocks, then carve tips and leading edge to final shape. Sand entire wing smooth, clear-dope and paper-cover. Carve center section leading and trailing edge square to fit space between fuselage formers F5 and F7. Drill for hold-down bolts. Carve wing saddle in fuselage, put wing in position and mark hold-down strips for bolts. Hold-down nuts soldered to strip of tin are positioned under strips.

Next make nacelles. Space engine bearers according to engine used. Plans show spacing for K&B .19 power.

Locate engine mounting holes in the bearers, make nut plates and put in place. Relieve bottom block for nut plates and glue bearers to bottom block. Fill along sides of bearers with ½" sheet. Rough-carve bottom shape, then hollow to accommodate fuel tank. No. 12 Perfect tanks are used but tubing is repositioned so that tank is placed with narrow side down. To help join nacelle to the wing, triangular pieces of ⅜" thick hardwood are positioned below leading edge, along top of engine bearers. The underside of leading edge should be notched slightly to receive the hardwood. Plywood bulkheads at rear of leading edge and spar help to strengthen nacelle wing joint.

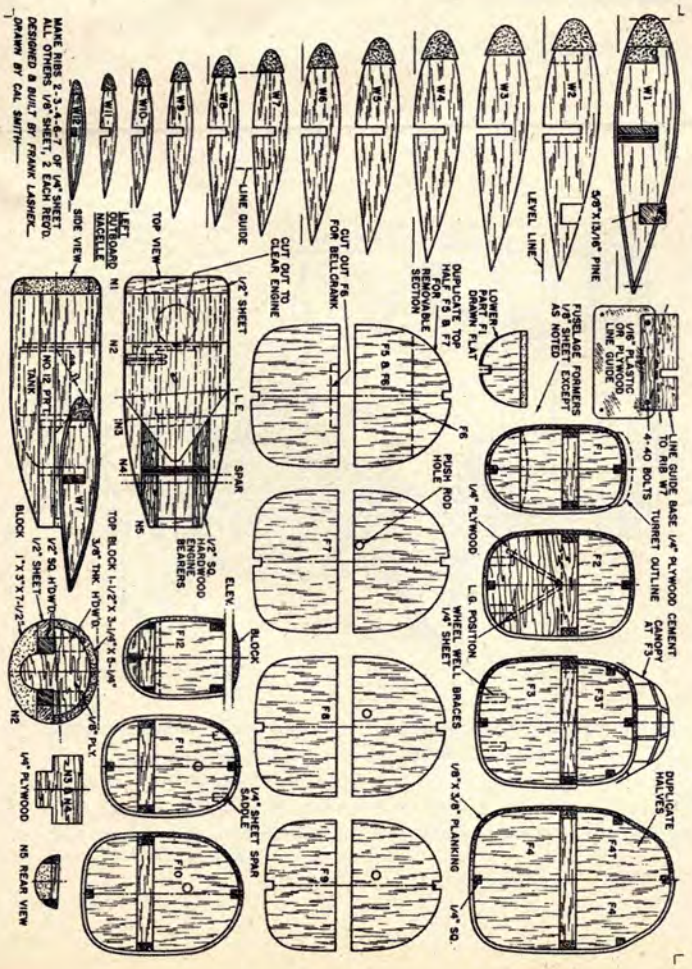
Glue bulkheads to leading edge and spar, then fit nacelle to bottom. Where hardwoods join in this assembly use hard glue such as Weldwood. Some cutting and fitting will be needed to match up all the surfaces here. On outboard nacelles the top of engine bearers clears the bottom surface of the wing and some packing will be required. The inboard nacelles are a bit different, the engine bearers being above the bottom surface, so the engine bearers, the lower skin and spars will have to be notched a bit. Note that nacelles are level with ground and therefore at an angle in relation to wing dihedral. See nacelle section N2.

Top portion of nacelle is carved from block, carve inside to fit over firewall N2. Portion behind N2 can be cemented permanently in place after tank and tubing is installed. Top portion ahead of N2 can be made removable if desired for access to engine. Front face of nacelle is shaped from ½" sheet and cemented to front of engine bearers and bottom block.

Line guide base is piece of ¼" plywood cemented against outside face of rib W7; cut through bottom skin to set in position. Line guide itself can be plastic or plywood. It is bolted to base so that guide and leads can be taken off wing easily, when wing is removed from fuselage.

Only remaining woodwork is the rudders. These are carved from solid stock, and can be joined to stabilizer now or after finishing. Cement stabilizer in place on fuselage rear and add fins and rudders as desired. Mount rudders with about ½" offset to right. Add block fuselage fairing on top of stabilizer and turret fairing over center section of elevators.

Finishing and scale details will be taken care of in Part II.



Bill of Materials

40—⅛"x⅜"x36", fuselage planking
8—3/32"x3"x36", wing skins
5—⅛"x3"x36", fuselage formers and wing ribs
1—¼"x3"x36", wing ribs
3—¼"x¼"x36", fuselage keel and backbone
4—¼"x½"x36", fuselage crutch
2—1"x1½"x36", wing leading edge
2—¼"x1"x36" (pine), wing spar
1—⅝"x3"x36", fin and rudders, wing tips
1—½"x3"x36", stabilizer and elevators, nacelle fronts
1—1"x3"x36", nacelle bottoms
1—1½"x3"x21", nacelle tops
1—½"x½"x36" (hardwood), engine bearers
1—⅝"x13/16"x6" (hardwood), rear landing gear mount
1—8"x9"x¼" plywood wing joiner, line guide, landing gear former, nacelle former, bellcrank mount, wing hold-down
1—6"x6"x⅛" plywood, nacelle formers
Scrap blocks for turrets, canopy, fairings
2—36" length ⅛" dia. wire, landing gear, elevator horn, skid
1—36" length 3/32" dia. wire, pushrod, skid
2—36" length 3/64" dia. wire, line leads
3" Veco Bellcrank, one 2" dia. wheel, pair 3" dia. wheels, 9 Eye or "J" bolts, four 6-32x3½" bolts, four F&B elevator hinges, two or four #12 Perfect tanks, cement, Weldwood, clear dope, tissue, primer, olive drab, gray dope, decals as needed.

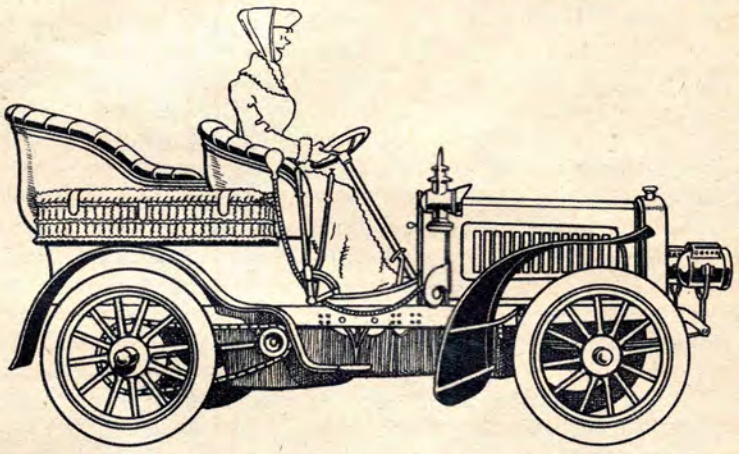
Full-size plans for the B-24 are a part of Group Plan #854 available from Hobby Helpers, 770 Hunts Point Avenue, New York 59, N.Y. (50c)

AUTO Progress

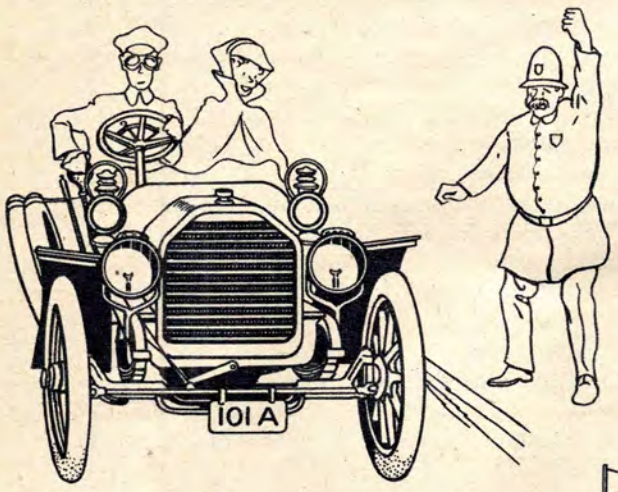
By DOUGLAS ROLFE

MEMORY LANE

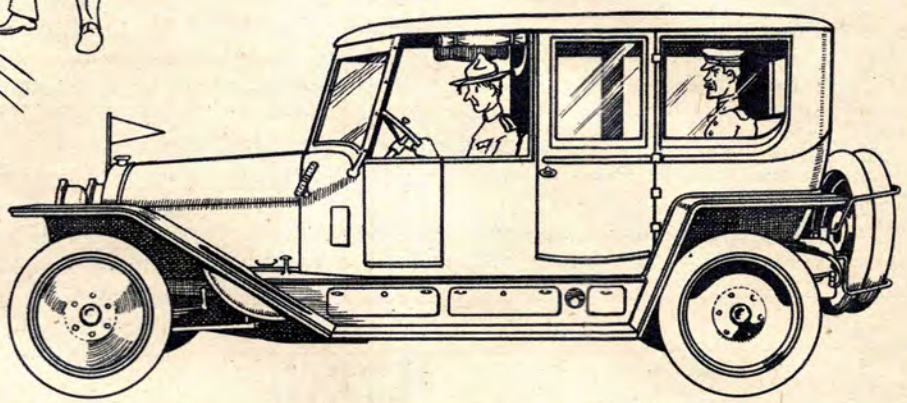
COLLECTION NO. 2



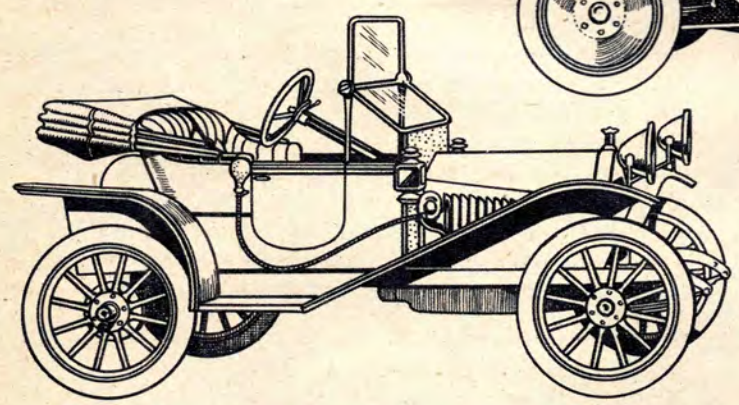
Pope Manufacturing Company produced this 1904 chain-drive Pope-Toledo. This early firm (1897-1912) also put out a Pope-Hartford.



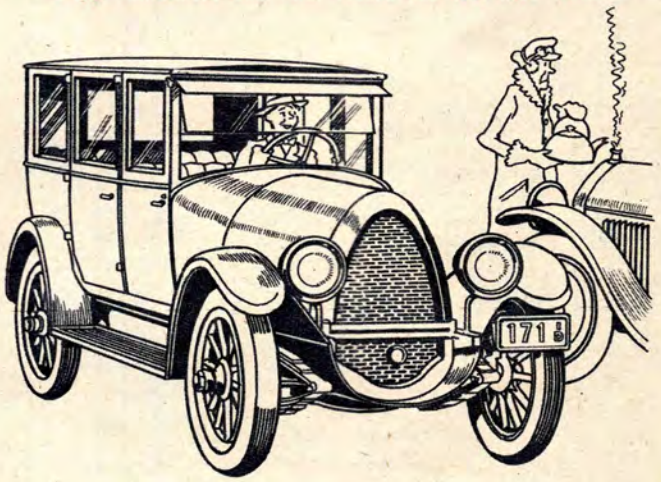
For more than 30 years one of proudest names in U.S. auto history, Peerless dropped out in 1932. This is 1904 Peerless Model 14.



Another great name was Locomobile (1899-1929). General Pershing's WW I staff car shown here had steel disc wheels, V-type windshield and what looked like jeep-style fenders.

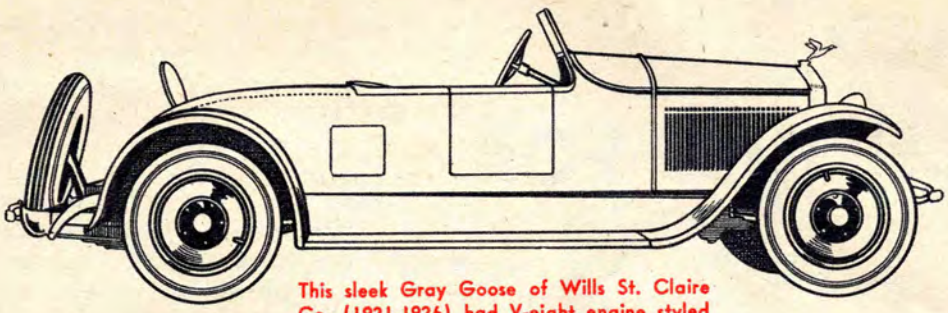


The 1912-13 Model 32 Roadster by Hupmobile (above). The "Hup," which gave up ghost in '41 after more than 30 years of life, earned rep as a top car in medium-priced field.

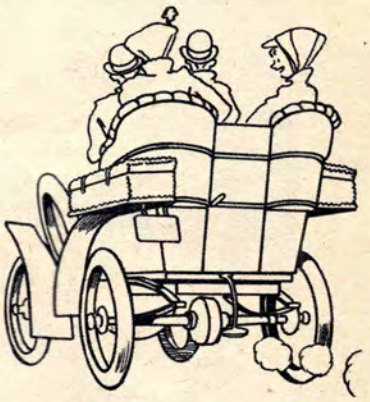


Zero weather held no terrors for proud owners of this 1923 Franklin Sedan (right). From 1902 till '32 Franklin specialized in cars having air-cooled engines, while their resilient all-wood chassis and elliptical springs made them most comfortable riding autos of the day.

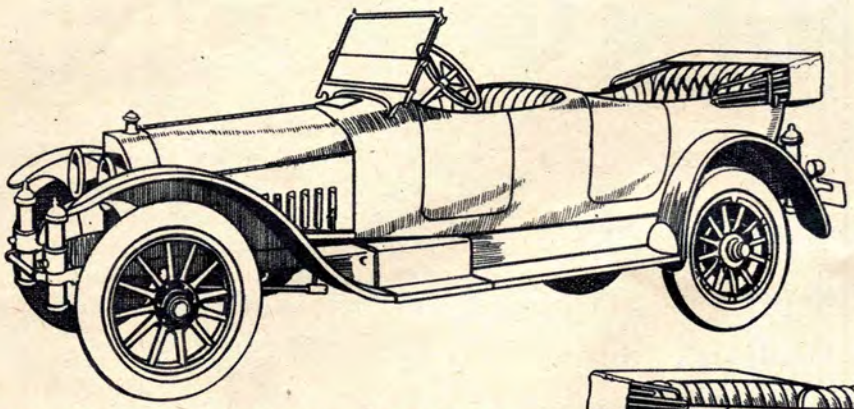
Rambling down Memory Lane once more we run into a number of cars famous in American automobile history and regarded with great affection by their owners. Some of these makes we will encounter yet again on further rambles. It will be impossible, for example, to pass up the last model of the Pierce-Arrow which anticipated modern body styling by almost a decade and to an extraordinary degree. It will be noted that the cars illustrated on these pages range in styling all the way from the curious old rear-entrance tonneau types to such slinky jobs as the custom Pierce of 1920,



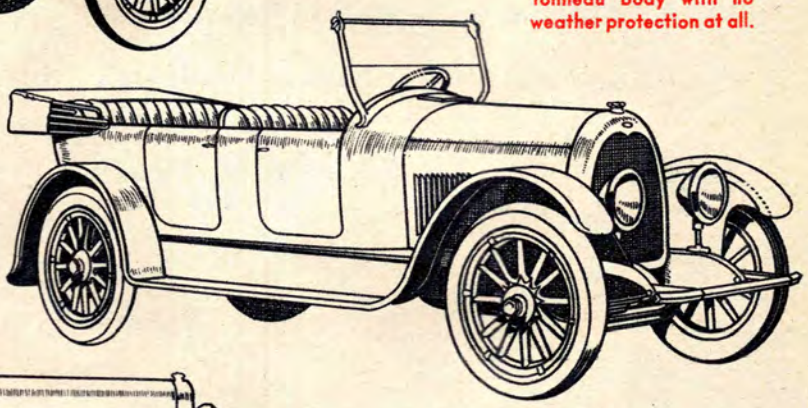
This sleek Gray Goose of Wills St. Claire Co. (1921-1926) had V-eight engine styled after Hispano-Suiza powerplant.

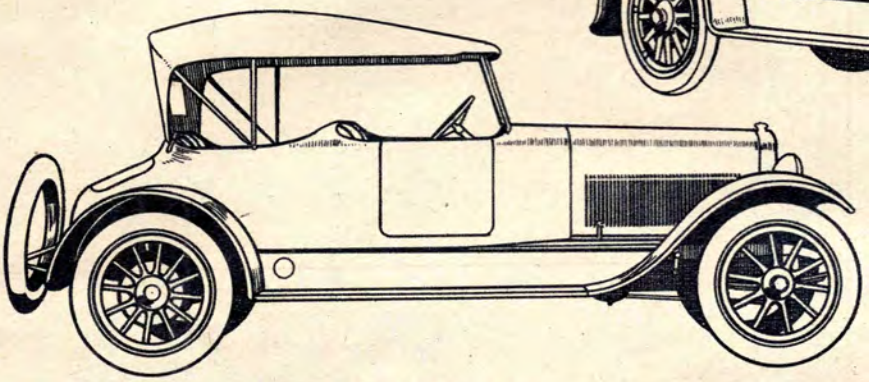


Familiar sight in pioneer days—rear-entrance tonneau body with no weather protection at all.



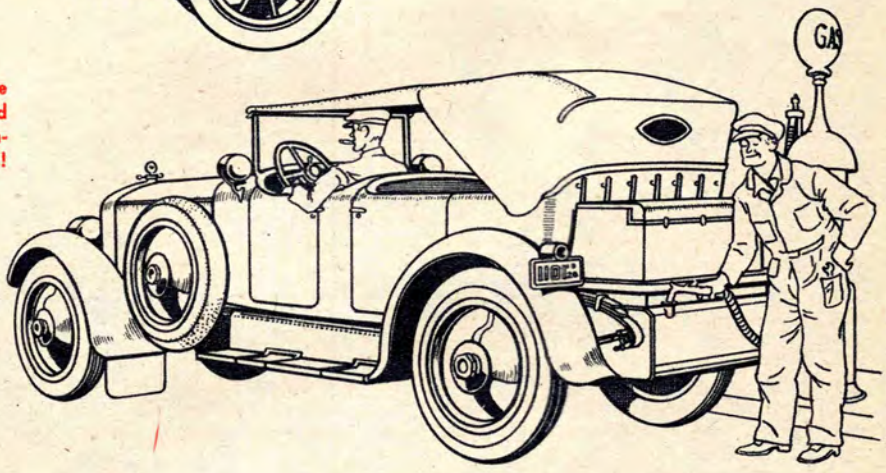
The Owen-Magnetic (1916-1920) was one of the first cars in the world able to advertise pushbutton (electric) gearshift—in this case standard equipment.





The "Eight with eighty less parts" was how Apperson blurbed this 1920 touring model. Apperson (1905-1926) labeled its eights with the catchy term "Jackrabbit."

The "chummy roadster" enjoyed a brief vogue. The above 1919 model Chandler (1912-1929) was priced at $1795, boasted 14-16 miles to the gallon and promised at least 6,000-8,000 miles on one set of tires!



Product of a true pioneer car company, this 1920 custom-built Pierce-Arrow phaeton was the last word in luxury car design of its time. Pierce-Arrows rolled the roads from 1901 until 1938. This one was for a Hollywood actor.

and that such refinements as oleo shock absorbers, doughnut tires and automatic gearshifts have already put in their appearance—that is to say by 1920. As a matter of record the electric gearshift goes as far back as 1913, and all the cars shown with the exception of the vintage models such as the Pope-Toledo and the early Peerless had full electrical equipment, including self-starter and horn. Steel disc wheels had become common and were gradually replacing the old and cumbersome detachable rim. Emphasis has been given to open models, since even in 1920 they predominated.

LITTLE RED SCHOOLHOUSE FOR Roughnecks

At Sowela Tech in Louisiana they're conducting the only course of its kind in the world— teaching young fellows how to be oil well drillers

By GEORGE N. HEBERT

■ "Do you guys really teach a fellow to roughneck?"

"How long before I start making money in the oil fields?"

"Can you help me get a job?"

"I hear you learn on a real drilling rig. Is that right?"

He was young, maybe eighteen, and he wore blue jeans hooked into worn cowboy boots. He had the work-roughened hands and windburned face typical of any farm boy around Lake Charles, Louisiana.

When he asked these pointed questions of one of Sowela Tech's drilling instructors, School Director Rex Smelser nudged me.

"He'll get his answers," Smelser said, as the boy and the instructor walked off, deep in conversation. "If he's really interested it means that the oil industry will have another candidate for the boll weevil* corner—the position a new

Students learn the ABC's of drilling by practice on this model rig that really and truly drills.

roughneck takes on the drilling platform. Another trained and capable youngster to plug a payroll gap for some drilling contractor."

The Sowela Vocational-Technical School is the only vocational school in the world teaching oil well drilling. It holds that distinction because of a man with foresight and determination—and because of a situation which was giving oil men headaches around 1948.

Managers of drilling companies in southwest Louisiana — third largest oil center in the United States—were getting more than their share of problems from skilled labor shortages about six years ago. Monkey boards** and rotary tables were being deserted for comfortable control rooms and inside work benches. The situation was assuming the proportions of a major problem when Rex Smelser, oil field worker turned educator, stepped in and took a helpful hand.

He did something which now seems such an obvious solution yet, surprisingly enough, is seldom tried by institutions of this type. He tailored his vocational school course to fit the most urgent need of the local oil industry—the need for drillers.

When Smelser set out to form an advisory board for his new courses he found not only drillers but supply salesmen, refiners and marketers eager to help. Cities Service Refining Corp. is represented on the general advisory committee by George C. Keller. It is his responsibility, along with other members, to assist the school in placing students; to acquaint Louisiana oil men with the potential source of manpower in Sowela Tech.

For George Keller and his associates the job has become easier every year. The school has quadrupled its enrollment since the Petroleum Division was added—positive indication of how heavily area industry is drawing upon Sowela's "educated roughnecks."

Students are quickly taught the fundamentals of every job handled by a five-man drilling crew. This isn't done by conventional lecture methods—not by any means!

They are taught with the aid of an authentic, working model rotary drilling rig.

This model rig—it has actually drilled to a depth of 50 feet—has been the greatest single contributing factor in turning out 2,000 skilled crewmen in just five years; 90 per cent of whom now draw pay on regular drill jobs.

Co-op work is the latest innovation in Smelser's oil well drilling program. It provides encouraging and practical answers to the questions the young farm boy was asking.

Sowela Tech, last year, entered into an "Earn While You Learn" training program in co-ordination with three contractors who have major operations in the area—the Circle, Falcon-Seaboard and Niklos Drilling Companies.

While a co-operative arrangement like this is the oldest type of vocational training—pioneered by the University of Cincinnati Engineering School in 1906—the Sowela Tech program is the first recorded application to the drilling end of the petroleum industry.

EACH MONTH—

—this magazine presents features on jobs, careers and opportunities in education. Recent issues have contained articles on college scholarships open to high school men (April), how to become an Air Force pilot (May), how to become a draftsman (June), the chances ahead in all branches of engineering (July). Future issues of Air Trails Hobbies will bring you many more articles on training for your future. Remember—

—Make "ATH" Your GHQ for Info on Jobs and Careers

The co-op program was started because many young men living in outlying areas could not otherwise attend the popular drilling classes. It was inconvenient to commute, and they couldn't afford to rent rooms in the overcrowded community. Being able to work two weeks out of four, drawing full pay for time spent on a rig floor, has solved this problem and opened up the road to permanent employment in this industry.

As one Niklos tool pusher phrased it: "Putting on a roughneck with some kind of training is sure different from the days when we hired our 'boll weevils' right out from behind a mule's tail. These youngsters come to us knowing more about roughnecking than we could teach a man in two or three months back in the old days."

Some of Sowela Tech's graduates are bound to move up in the oil industry, to become the bosses of tomorrow. When that happens, they'll want trained boll weevils, and they'll know where to turn. It looks like busy years ahead for Sowela Tech, for Rex Smelser and his aides, and for that model drilling rig which you couldn't buy today for ten times what it cost!

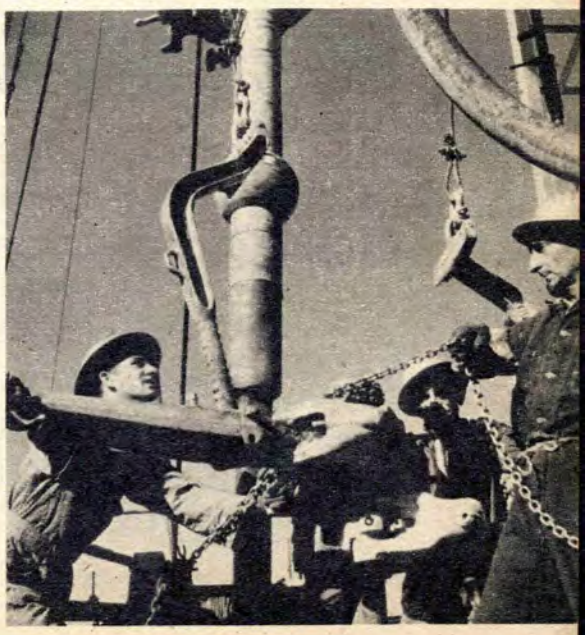
Editor's Note: The above article is reprinted from "Service," a publication of Cities Service Co. . . . To amplify your knowledge of the term "roughneck," as used in the petroleum industry, he is also referred to as a floorman; he handles the lower end of the pipe, connecting and disconnecting pipe lengths. Roughnecks may in addition help pumpers set up pumps, work with crews doing any job necessary in erecting a derrick. . . . Although the laws under which Sowela Tech was established state that it is open to residents of Louisiana, it is not necessary to be a citizen of the state in order to attend. Nor is a certain period of time for residence specified. Thus, anyone from another state desiring to go to Sowela would merely have to register with a Louisiana address—which could be that of a relative, of a hotel or rooming house. Officially speaking, the institution is called Sowela Vocational-Technical School, Lake Charles, La.

*Boll Weevil—1. Originally an inexperienced driller or borer. 2. An inexperienced worker in any capacity. 3. In California, a Texas driller or a rotary driller.

**Monkey Board—The platform on which the "monkey" stands while working. (A "monkey" is a derrickman, so-called because he must climb like a monkey to get to his working position.)

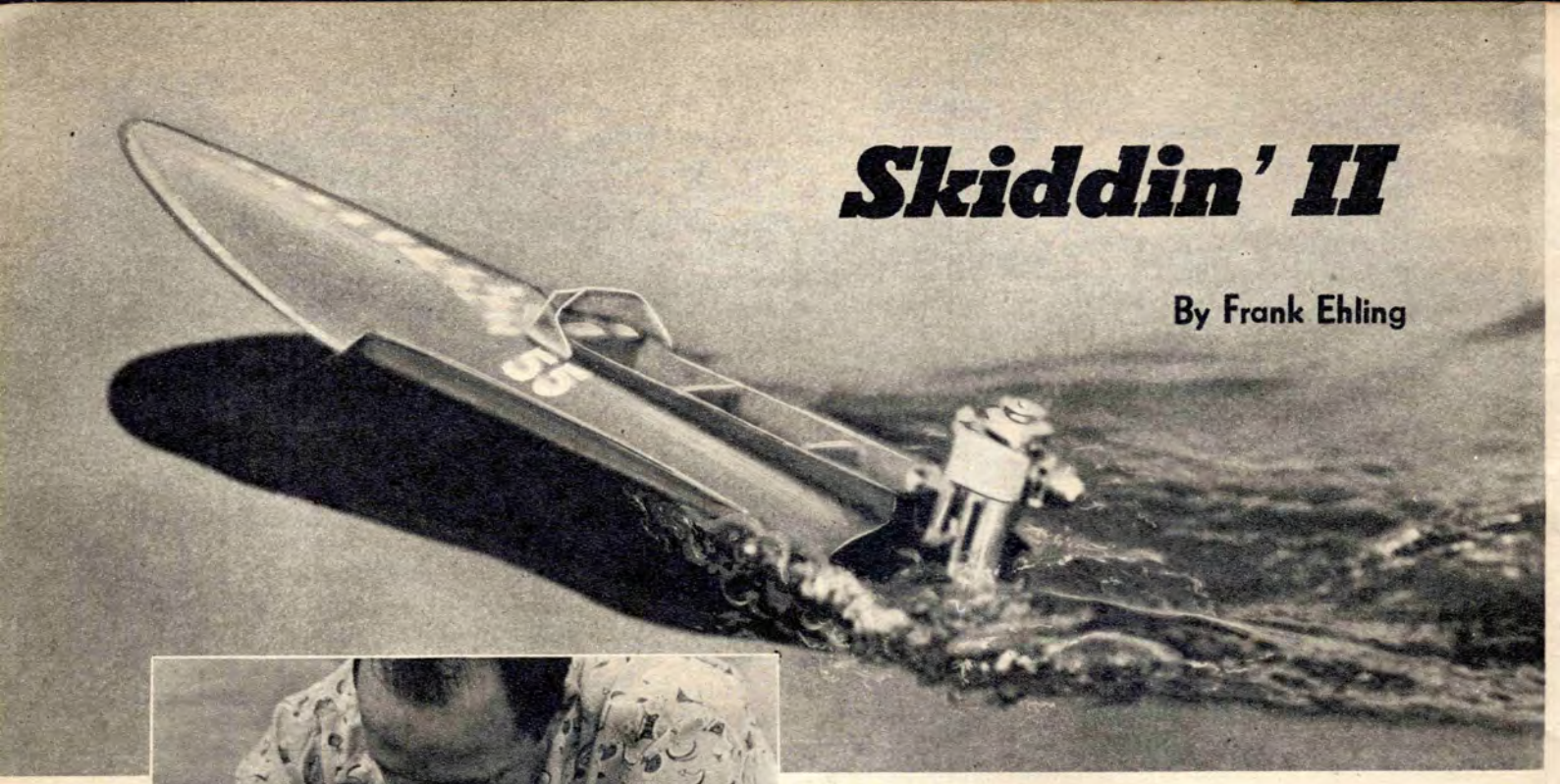
—The Petroleum Dictionary

Student drillers are given chance to do actual work in field—earn while they learn.

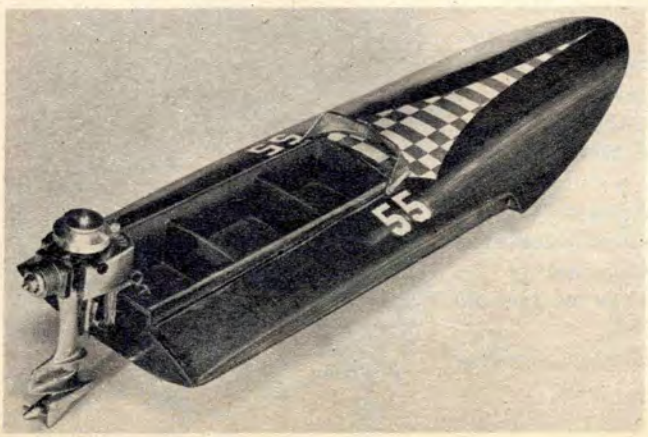


Skiddin' II

By Frank Ehling



Elongated design was evolved to produce more stable craft which would not loop-the-loop when running in choppy water.



Free-running miniature outboard racer can be turned out in an evening, will give you months of exciting operation

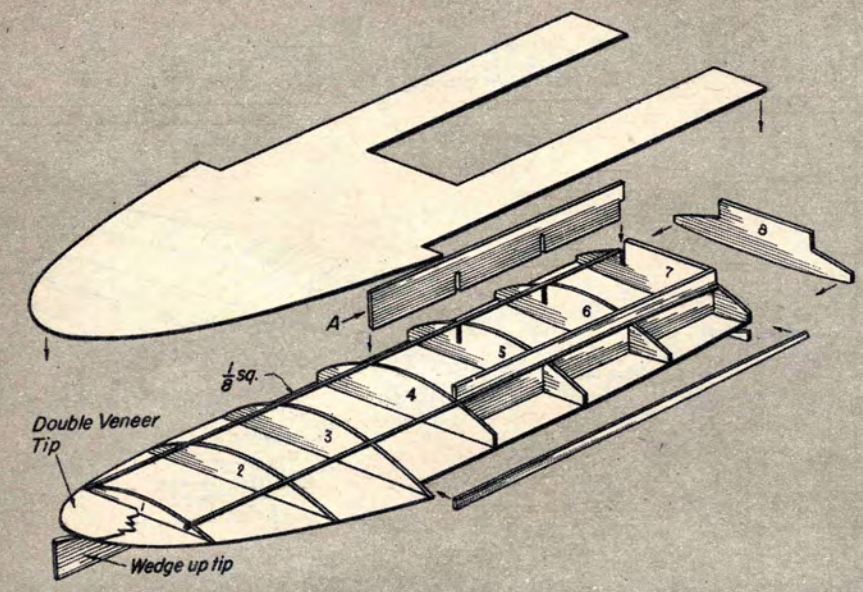
■ Who's skiddin' who? We're skiddin', too. We mean we've been having lots of fun racing this free-running scale-like outboard racing shell. Although you can put a bridle on Skiddin' II and run it in circles on the end of a tether line from a center post, the real thrill comes from letting this speedster operate on its own. That photo above shows the craft making a turn in a sheltered cove. It was running with engine turned to produce a 4-foot circle.

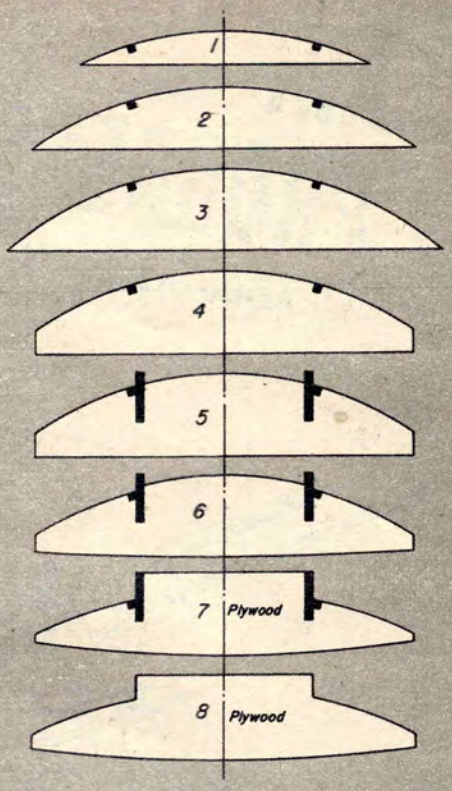
This boat is somewhat longer than the average. We wanted a real stable craft so the beginner in speed boating would have an easy time getting started. The extended length helps prevent the boat from flipping (in an inside loop!).

We used Berkeley's 1/20" thick mahogany veneer for top decking and bottom covering. No splicing was necessary since the wood is available in good size widths. It requires only staining and fuel proofing. Keep your cement off the outside surfaces and edges of the mahogany or you'll mar its final appearance.

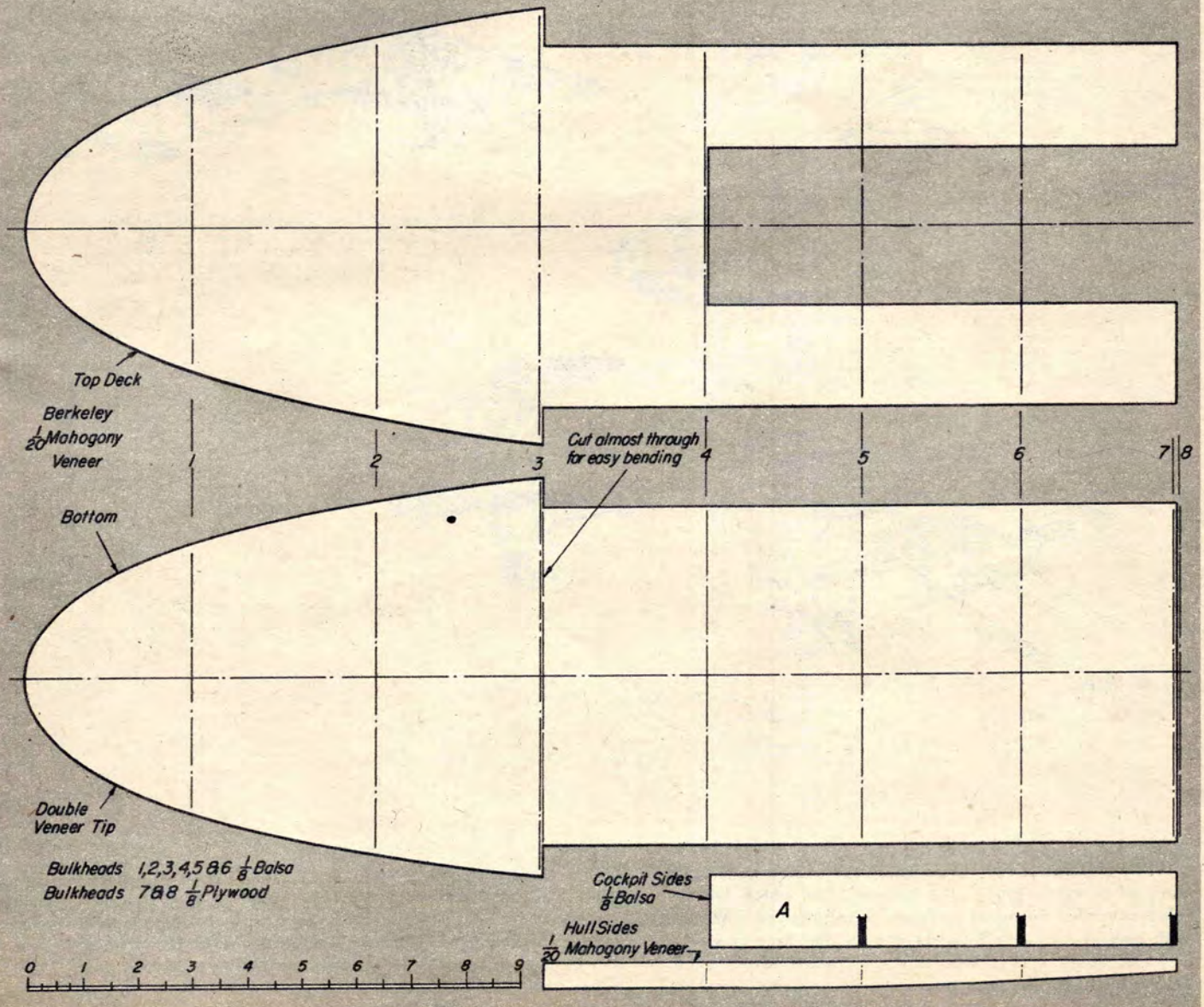
Five quick steps make up the boat: cement bulkheads to bottom; add stringers; cement in cockpit sides; then add the top deck; follow with the hull sides.

Note of caution: when changing the boat's heading (direction), don't lift the screw (prop) from the water if engine is still running. If you operate in a pool with cement sides or rock edging, protect your racer with a sponge-rubber bumper cemented to bow.





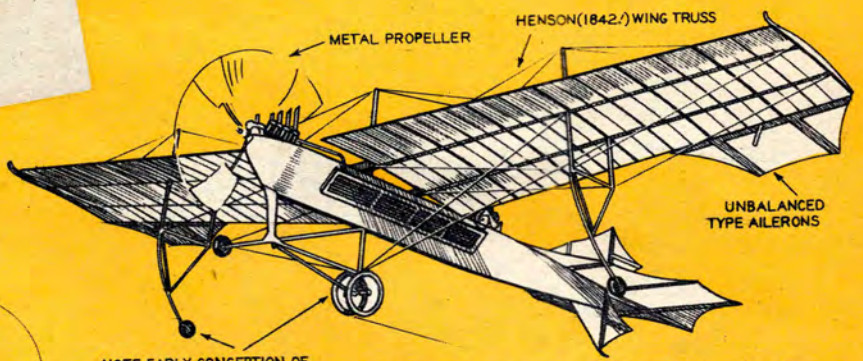
Full-size working drawings for Skiddin' II are a part of Group Plan # 854 from Hobby Helpers, 770 Hunts Pt. Ave., NYC 59 (50c).

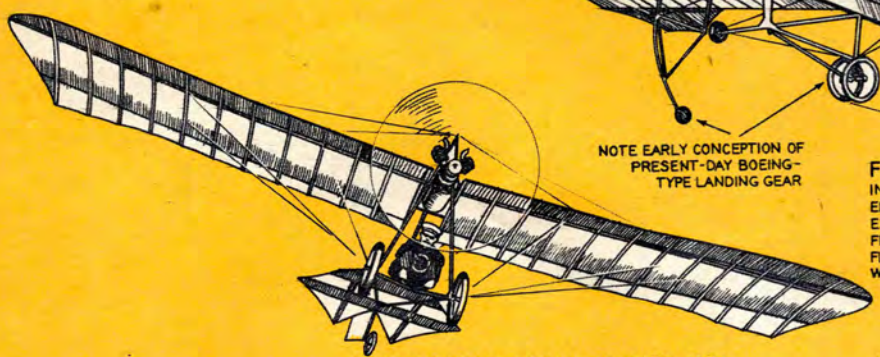


AIR PROGRESS

By DOUGLAS ROLFE

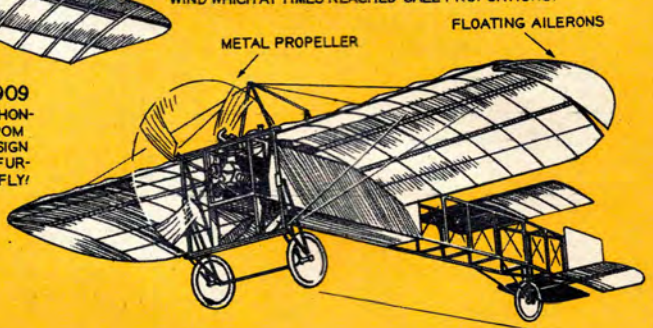
Famous Firsts





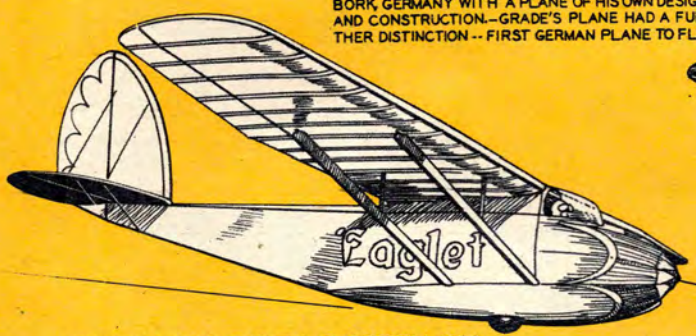
FIRST FLIGHT IN A GALE WIND – 1908

IN A DAY WHEN BUT A HANDFUL OF PILOTS HAD MASTERED THE SIMPLE TURN AND FEW, IF ANY, ATTEMPTED FLIGHT EXCEPT UNDER IDEAL WEATHER CONDITIONS THE FAMED FRENCH PIONEER AVIATOR, HUBERT LATHAM, TOOK OFF, FLEW FOR WELL OVER AN HOUR AND LANDED SAFELY IN A WIND WHICH AT TIMES REACHED GALE PROPORTIONS.



WORLD'S FIRST AIRMAIL FLIGHT – 1909

COMPLETE WITH SPECIAL AIRMAIL STAMP TO HONOR THE EVENT WAS MADE BY HANS GRADE FROM BORK, GERMANY WITH A PLANE OF HIS OWN DESIGN AND CONSTRUCTION.–GRADE'S PLANE HAD A FURTHER DISTINCTION -- FIRST GERMAN PLANE TO FLY!



FIRST OFFICIAL CROSS-COUNTRY FLIGHT – 1908

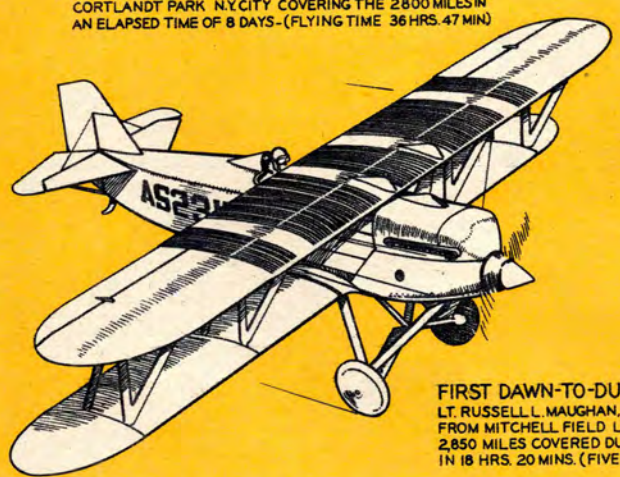
LOUIS BLERIOT MADE THE WORLD'S FIRST OFFICIALLY RECORDED CROSS-COUNTRY FLIGHT WHEN HE FLEW FROM TOURY TO ARTENAY(FRANCE), RETURNING TO THE POINT OF TAKE-OFF.–TOTAL DISTANCE, 18 MILES, INVOLVED 3 LANDINGS

FIRST TRANSCONTINENTAL GLIDER TOW – 1930

CAPT. FRANK HAWKS, NOTED U.S. PILOT, WAS TOWED IN A FRANKLIN GLIDER FROM SAN DIEGO, CALIFORNIA, TO VAN CORTLANDT PARK N.Y. CITY COVERING THE 2800 MILES IN AN ELAPSED TIME OF 8 DAYS – (FLYING TIME 36 HRS. 47 MIN)

FIRST NON-STOP NEW YORK-CHICAGO FLIGHT – 1919

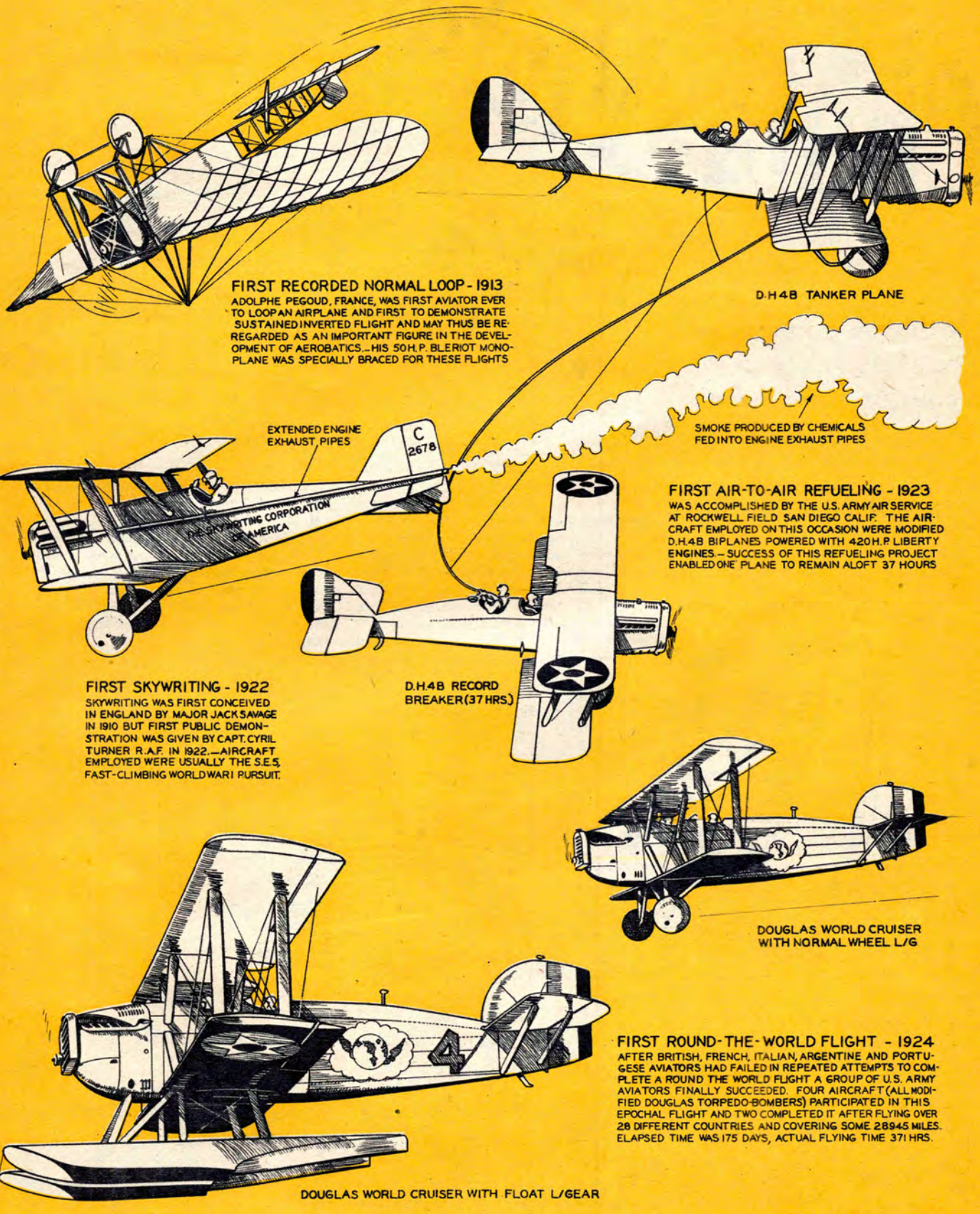
CAPT. E. F. WHITE, U.S.A.A.S., FLEW AN ARMY D.H.-4B 738 MILES NON-STOP BETWEEN THE TWO CITIES AT AN AVERAGE SPEED OF 106 MPH.



FIRST DAWN-TO-DUSK COAST-TO-COAST FLIGHT – 1924

LT. RUSSELL L. MAUGHAN, U.S.A.A.F., FLEW AN ARMY CURTISS PW-8 FROM MITCHELL FIELD L.I. TO CRISSY FIELD, SAN FRANCISCO,–THE 2,850 MILES COVERED DURING THIS HISTORIC FLIGHT WERE MADE IN 18 HRS. 20 MINS. (FIVE REFUELING STOPS ADDED 3 HRS. 25 MINS.)

With this issue Air Progress introduces a new series in the story of powered flight—the famous firsts which this magazine considers to be of paramount importance. We start with Hubert Latham's flight in a gale, the first of its kind, in 1908. Tame today, this was even more heroic than it seemed for his 50 hp Antoinette monoplane (prototype model of Antoinettes already illustrated in earlier numbers of A. P.), had a well-deserved reputation for breaking up in the air and killing the pilots. Latham was also first man to attain an altitude of 5000 feet in an airplane, first to attempt the English Channel crossing (he tried twice—ditched both times), and first to make a prolonged flight over and around


FIRST RECORDED NORMAL LOOP - 1913
ADOLPHE PEGOUD, FRANCE, WAS FIRST AVIATOR EVER TO LOOP AN AIRPLANE AND FIRST TO DEMONSTRATE SUSTAINED INVERTED FLIGHT AND MAY THUS BE REGARDED AS AN IMPORTANT FIGURE IN THE DEVELOPMENT OF AEROBATICS.—HIS 50 H.P. BLERIOT MONOPLANE WAS SPECIALLY BRACED FOR THESE FLIGHTS
D.H.4B TANKER PLANE
SMOKE PRODUCED BY CHEMICALS FED INTO ENGINE EXHAUST PIPES
EXTENDED ENGINE EXHAUST PIPES
C 2678
THE SKYWRITING CORPORATION OF AMERICA
FIRST AIR-TO-AIR REFUELING - 1923
WAS ACCOMPLISHED BY THE U.S. ARMY AIR SERVICE AT ROCKWELL FIELD SAN DIEGO CALIF. THE AIRCRAFT EMPLOYED ON THIS OCCASION WERE MODIFIED D.H.4B BIPLANES POWERED WITH 420 H.P. LIBERTY ENGINES.—SUCCESS OF THIS REFUELING PROJECT ENABLED ONE PLANE TO REMAIN ALOFT 37 HOURS
FIRST SKYWRITING - 1922
SKYWRITING WAS FIRST CONCEIVED IN ENGLAND BY MAJOR JACK SAVAGE IN 1910 BUT FIRST PUBLIC DEMONSTRATION WAS GIVEN BY CAPT. CYRIL TURNER R.A.F. IN 1922.—AIRCRAFT EMPLOYED WERE USUALLY THE S.E.5, FAST-CLIMBING WORLD WAR I PURSUIT.
D.H.4B RECORD BREAKER (37 HRS.)
DOUGLAS WORLD CRUISER WITH NORMAL WHEEL L/G
FIRST ROUND-THE-WORLD FLIGHT - 1924
AFTER BRITISH, FRENCH, ITALIAN, ARGENTINE AND PORTUGESE AVIATORS HAD FAILED IN REPEATED ATTEMPTS TO COMPLETE A ROUND THE WORLD FLIGHT A GROUP OF U.S. ARMY AVIATORS FINALLY SUCCEEDED. FOUR AIRCRAFT (ALL MODIFIED DOUGLAS TORPEDO-BOMBERS) PARTICIPATED IN THIS EPOCHAL FLIGHT AND TWO COMPLETED IT AFTER FLYING OVER 28 DIFFERENT COUNTRIES AND COVERING SOME 28945 MILES. ELAPSED TIME WAS 175 DAYS, ACTUAL FLYING TIME 371 HRS.
DOUGLAS WORLD CRUISER WITH FLOAT L/GEAR

a major city (Baltimore, Md., 1910). One other pioneer pilot (and designer) portrayed here deserves a few remarks. Louis Bleriot had another "first" to his credit—the first airplane crossing of the English Channel in 1909—at that stage in the development of the airplane a performance comparable to Lindbergh's solo flight over the Atlantic in 1927. Bleriot's Cross-Channel airplane was a simplified version of his earlier cross-country model. First air-to-air refueling flights recorded here and the first globe-girdling flights, also mentioned, are of paramount importance in the story of powered flight and definitely tie up with modern military air strategy and its emphasis on total global air penetration.

Chula Vistan

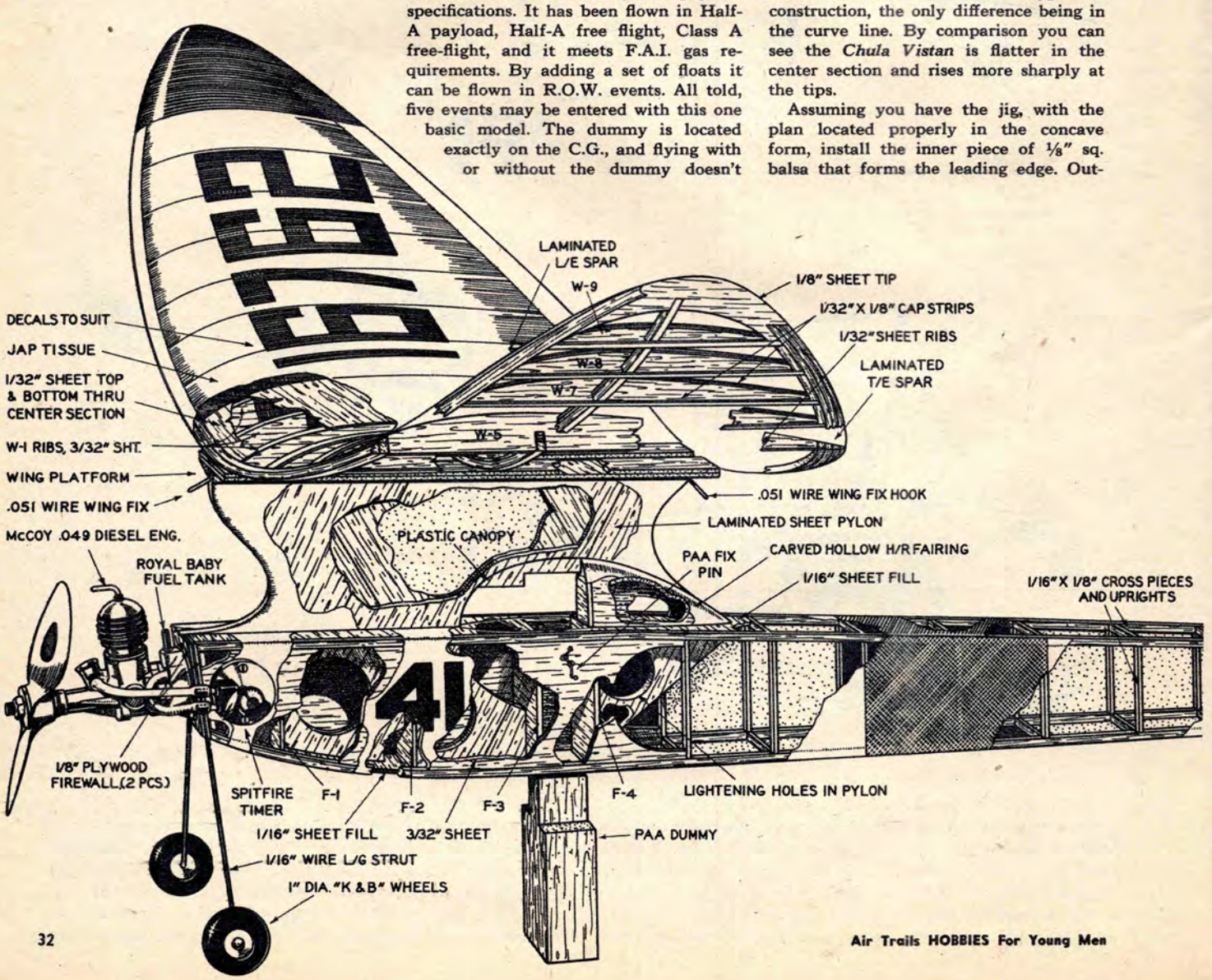
ELLIPTICAL DIHEDRAL DIESEL POWERED PAA-LOAD FREE FLIGHT CONTEST MODEL PLANE FOR *FIVE* EVENTS

By CPO TOM HENEBRY

■ This is the second of a series of small gas models with an elliptical dihedral wing form. It is unique for a payload model in that it retains the high performance of a true pylon, yet the simple cabin enclosure meets PAA's Half-A payload specifications. It has been flown in Half-A payload, Half-A free flight, Class A free-flight, and it meets F.A.I. gas requirements. By adding a set of floats it can be flown in R.O.W. events. All told, five events may be entered with this one basic model. The dummy is located exactly on the C.G., and flying with or without the dummy doesn't noticeably change the flight pattern.

Rather than repeat at length the construction of the wing jig, I refer you to page 37 of the January 1954 issue of Air Trails. The jig for *Swayback* and the *Chula Vistan* are the same in type and construction, the only difference being in the curve line. By comparison you can see the *Chula Vistan* is flatter in the center section and rises more sharply at the tips.

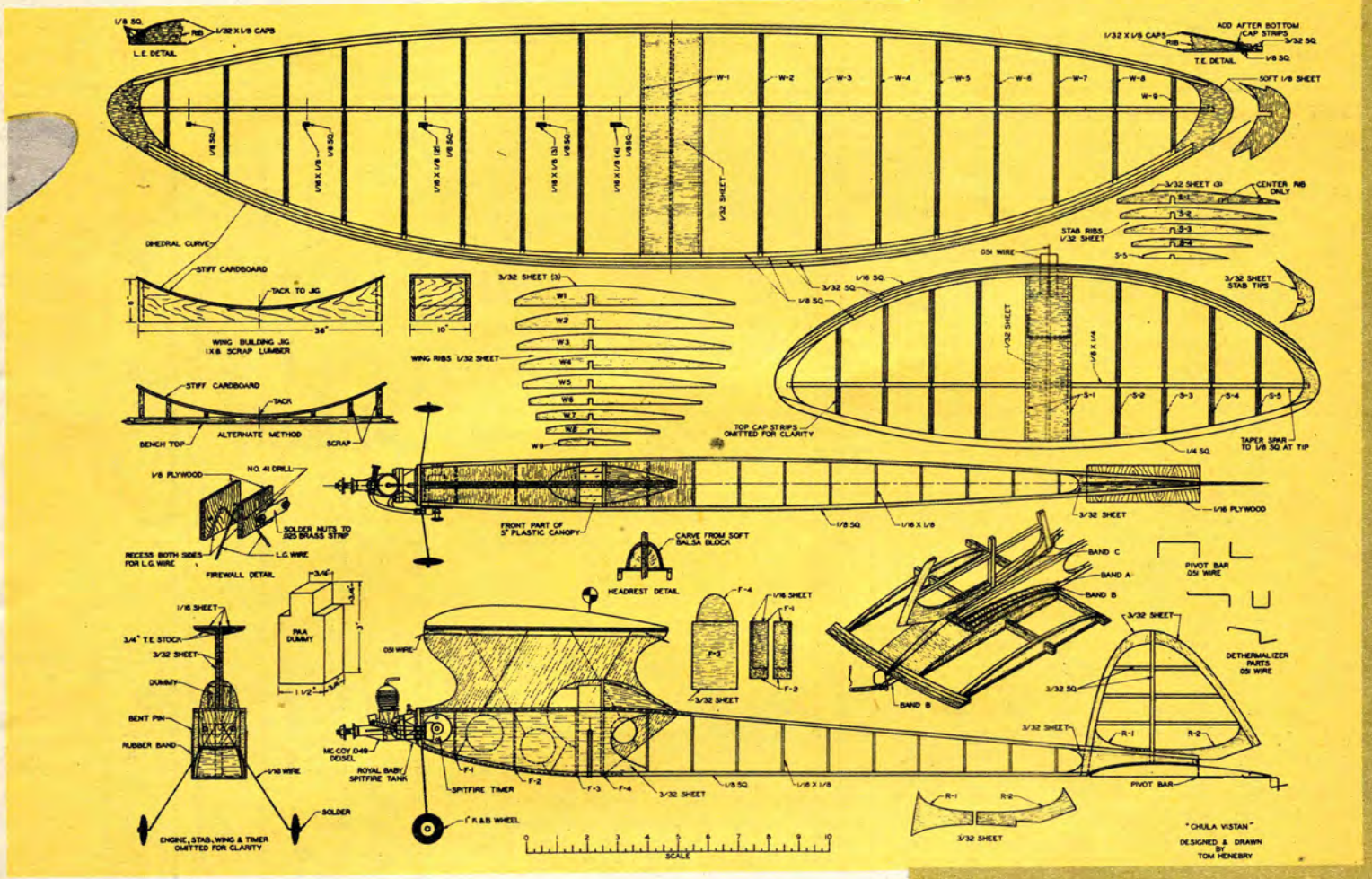
Assuming you have the jig, with the plan located properly in the concave form, install the inner piece of ⅛" sq. balsa that forms the leading edge. Out-

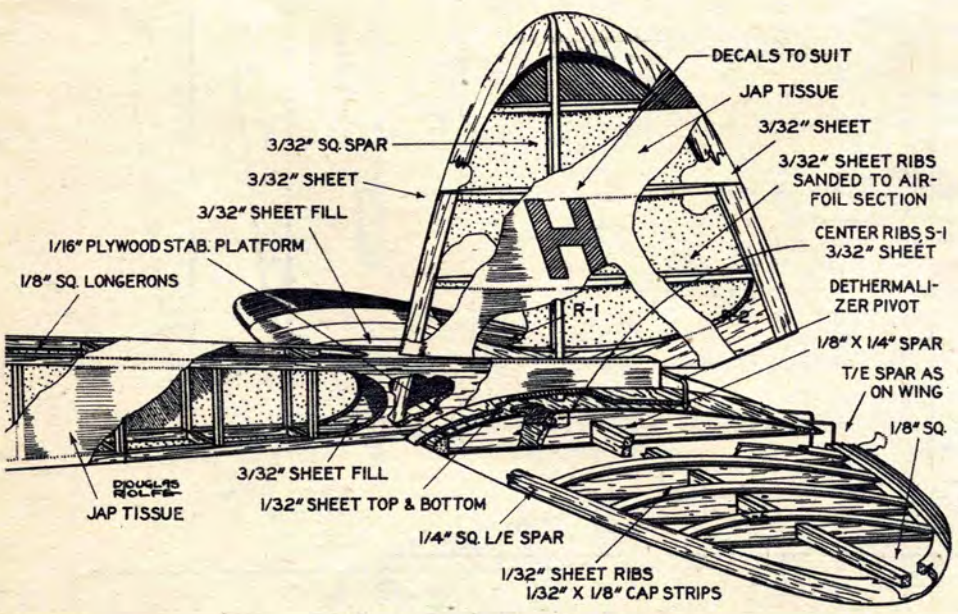


line it with pins and weight it down so it stays in contact with the form along its entire length. Cement the leading piece of 1/8" sq. along its entire length to the piece already installed; you now have a leading edge 1/8" high and 1/4" wide. Repeat these steps until you have the leading edge built up to 1/4" sq. and evenly cemented together at all points of contact. The trailing edge is made in the same manner except the inner piece of 1/8" sq. is installed a little later.

When the leading and trailing edges are set up, cement the slotted 1/8" sheet tips in place. Follow with the 1/8"x1/32" bottom cap strips, cut to size and cement

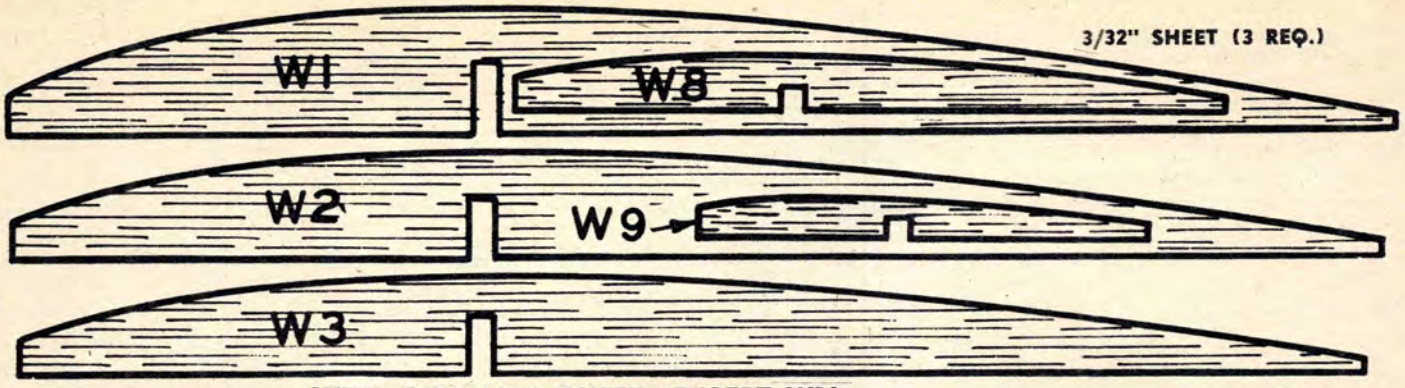
Unusual wing building jig for this model.





Detailed cutaway drawing is by Douglas Rolfe, nationally known aircraft artist. Mr. Rolfe's work appears regularly in this publication and in the forthcoming "Air Progress"

Somewhat different is the dethermalizer system used by Henebry on Chula Vistan.



WING RIBS 1/32" SHEET (EXCEPT W1)

the 1/32"x2" cross-grained sheet in the indicated position in the center section. After the cap strips and center section strips are in place, cement the inner piece of ⅛" sq. trailing edge to the trailing edge as well as to the tops of the cap strips and center section piece.

Cement a piece of tough ⅛" sq. from tip to tip, filling the slots in the tips and cement securely to all cap strips and center section strip. You will need to weight the spar down with any small heavy object at hand to assure even contact with all cap strips. The spar is built up by cementing successive pieces of 1/16"x⅛" to the ⅛" sq. already installed. These pieces are progressively shorter as indicated, so when the spar is complete it is not unlike an automobile leaf spring, thicker in the center and thinner at the tips.

To complete the wing, cement in the ribs and the top cap strips, cover the three center section ribs with cross-grained 1/32" sheet and finally add the unslotted pair of wingtips on top of the installed pair. When the wing is thoroughly dry remove it from the jig, shape the leading and trailing edges and the tips with sandpaper—and of course an overall sanding with fine sandpaper. The wing is now ready to cover. I believe it is at this point that the builder realizes the beauty of this type of wing construction. No weak dihedral joints, no chance of misalignment, and even without covering its resistance to torsion is amazing. The secret here of course is that every strength member in the structure is prestressed.

Stab construction is the same as the wing except the leading edge and the spar are not laminated. The spar should be tapered as indicated before installation.

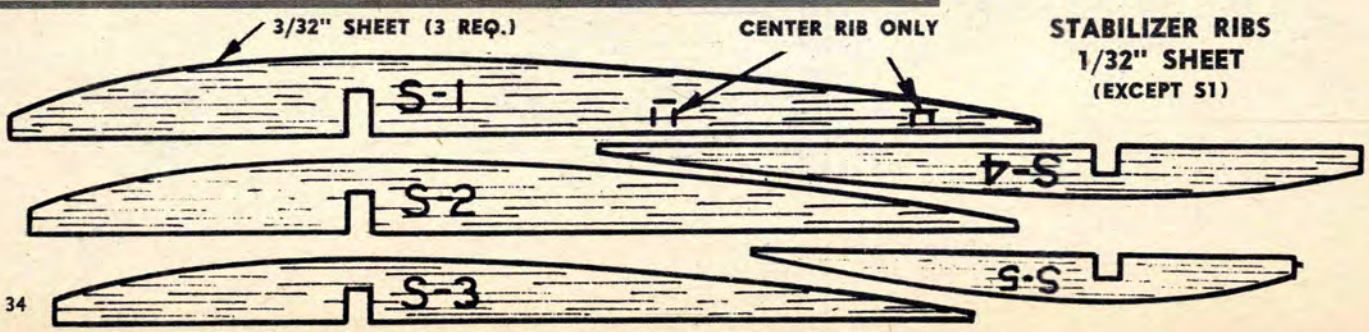
Fuselage construction is conventional; make the two sides over your full-sized pencilled plan. You will note that the longerons are ⅛" square but the sheet fill-in is 3/32"; this is intentional. Place scrap pieces of 1/32" sheet under the sheet parts to bring them flush with the longerons on the first fuselage side. Make the other side directly over the first, but push the sheet parts down so they are 1/32" below the edge of the longerons. On assembly be sure the depressed sheets are on the outside; the longerons are then sanded smooth with the face of the sheet before covering.

The pylon is made from laminated pieces of 3/32"x3" overlapping each other at 60 degrees. The pylon extends through the fuselage to the broken line on the drawing. After laminating the pylon is cut to shape, sanded, and lightening holes cut where indicated, and formers F-1, 2, 3 and 4 are cemented in position on the pylon. The complete firewall assembly containing the landing gear and engine mounting nuts is cemented in place securely. Insert a waxed PAA dummy in position between F-3 and F-4—be certain he fits snugly.

With the dummy in place, cement the fuselage sides to the formers and firewall, being careful to maintain correct alignment. Cement the 1/16"x8" cross pieces in place, then the completed rudder, fill in as indicated with 1/16" sheet. The 1/16" plywood stab platform is cemented in place with the fuselage lying on a smooth, flat surface and the stab in place. Be sure it follows the curve of the stab exactly and that the stab is in line with the fuselage bottom.

The headrest fairing is carved from soft balsa, hollowed out and installed as shown. The plastic canopy is cut to size, slotted to fit around the portion of the pylon that protrudes through it, and cemented in place. Cut the required holes for the engine timer but do not install it until after covering. Finish shaping the pylon and add the ¾" trailing edge stock plus the two layers of 1/16" sheet, leaving a ⅛" wide strip on the center line for a wing key.

The completed structure is covered with Jap tissue, (*Continued on page 69*)



STABILIZER RIBS
1/32" SHEET
(EXCEPT S1)

For Model Airplane Flyers:

Free Flight Color and Visibility Chart

By DR. STANLEY D. HILL
Member 1953 U.S. F.A.I. Gas Team

FINISH	FINISH COLOR	RELATIVE BRIGHTNESS	VISIBILITY AGAINST BACKGROUNDS					
			SKY			EARTH		
			BLUE	CLOUDY	HAZE	DRY GRASS	BROWN	GREEN
PIGMENTED DOPES (OPAQUE)	WHITE	10	G	F	F	G	G	G
	ALUMINUM	9	G	F	P	G	G	G
	YELLOW	8	G	F	F	P	F	G
	ORANGE-YELL.	6	G	G	G	G	E	E
	ORANGE	4.5	G	E	E	E	E	E
	LIGHT GREEN	3	F	F	F	G	F	P
	LIGHT RED	2.5	G	G	G	G	G	G
	DARK GREEN	2	G	G	P	F	F	P
	DARK RED	1.5	G	G	F	G	F	P
	TRUE BLUE	1.5	F	G	P	F	G	P
	INSIGNIA BLUE	1	G	G	F	F	F	P
	MAROON	.5	G	G	F	G	F	P
	BLACK	.3	G	G	F	G	F	P
TRANSP.	RED		E	G	F	G	F	F
	ORANGE		E	E	E	E	G	E
	YELLOW		E	F	P	P	F	G

LEGEND: E = EXCELLENT G = GOOD F = FAIR P = POOR

■ This chart is presented to emphasize and clarify the most neglected phase of free flight contest model design—VISIBILITY. Proper use of color for maximum visibility is as much a part of the design of a high-performance job as selection of engine or airfoil. To make a model of outstanding design and construction and then fail to use its full contest potentialities because it is difficult for the timer to see it for a maximum flight is as pointless as flying with the prop on backwards.

As an example, Ted Evans of the '53 British Wakefield team had one of the best built and certainly one of the best flying models at the international Cranfield meeting. Yet on his first flight the ship was timed for only 4:32 o.o.s. (out of sight) directly overhead simply because it was mostly white. His second and third flights were both "maximums," so he would have been a co-winner of the Wakefield Trophy except for this poor color choice.

So use a color scheme that enables the model to be seen as long as possible by the timer, and one that aids prompt retrieving. Let's analyze the problem point by point.

Color Contrast

Two factors concerned with the model itself are contrast with background and image size. Taking contrast first, we find that it presents itself in two forms: brightness contrast and color contrast. Brightness contrast may be either light on dark or dark on light. To be seen as separate from its background an object must present a 1% brightness difference within the eye of the viewer.

For our purposes light on dark provides the most usable combination since, with sufficient brightness, an object of any size however small or distant can bring about the required 1% difference. For example, the nearest star subtends an arc of only .056 seconds, while a dark object on a light background requires from .44 to 6 seconds of arc for detection, depending on color. It follows from this that to be just visible a dark model on light background must be larger or closer than a light model on dark surroundings.

Control of color contrast is the thing most easily achieved in finishing a model for high visibility. The colors used must contrast with the natural backgrounds of blue or gray sky, white clouds, and the greens and browns of the earth. *The reds, oranges and yellows are the only ones that possess effective brightness and any reasonable contrast with all probable natural backgrounds.*

The disadvantage of blues, greens, etc. is obvious. To contrast a model with itself by means of stripes or different colors on various parts of the ship defeats its own purpose, since visibility is a problem only when the model is very far away and distinguishable as just a spot—a spot of diluted color due to blending of these patterns at a distance and therefore of lowered contrast. Also, less area is available for the one color that actually does the job.

Image Size

Image size as related to visibility is simply a matter of "the bigger it is the farther away it may be seen." The model may be made to appear larger at a distance and therefore more visible if the whole ship is of one color rather than smaller areas of different colors. Models with deep slab-sided fuselages present a bigger target to the timer, making his job an easier one when the model is near the ground.

We may achieve the best contrasts by the following methods. Pigmented dope for the fuselage and rudder gives best visibility against the ground, buildings, and vegetation. The color giving best possible contrast here is orange. Reds,, unless very light, are poor in conditions of dim light, and yellows fade into hazy backgrounds easily. Transparent dyed dope for the wing and stab allow the plane to "light up" when overhead in direct sunlight, giving excellent light-on-dark visibility.

Orange, light red and also dark yellow do about equally well here, but since these surfaces are also the ones seen when searching for the model by air, orange again takes preference.

If transparent dyed dope is not available in your locality it can be made by dissolving ordinary household dye in acetone and adding it to clear dope. Fluorescent dyed dope is many times as bright as any other finish and if used on the entire ship nothing could be better, but the cost is prohibitive and it fades readily. It may be used on leading edges to increase visibility when a small front profile is presented to the viewer, but if the model's circling rate is high enough the 10-second o.o.s. rule makes up for low visibility in this position.

Metal foil with high gloss finishes can give occasional flashes of very high brightness for almost unlimited visibility, but it is not reliable due to the narrow "beams" of light reflected and of course is good only in direct sunlight. A high gloss also improves the brightness of colored finishes and should always be used.

Visual Acuity

There are a few factors that are concerned with the viewer and not the model that are of considerable help. If the size of the viewer's pupil is less than about 2.3 mm. due to a bright day, visual acuity will decrease due to difraction of the light entering the eye. Dark glasses of good quality will allow the pupil to become larger, resulting in better ability to see objects on the threshold of visibility. You may find that it will pay dividends in longer flights recorded before o.o.s. to loan the timer your sunglasses. A visored cap can also increase visual acuity for the same reason, and in addition reduce glare from dust on one's glasses, and to a lesser degree, glare from scattered light within the eye itself.

Summing up, then, we find that orange is the best all-around color for good visibility. It should be used in opaque pigmented form for the fuselage and rudder and in a transparent deeply dyed form for the wing and stab. A glossy waxed finish on both will increase "flash" visibility and apparent brightness of the color.

Proper use of color can make a very real difference in the flight times recorded for your ships. Try it and see how it will help bring you into the winner's circle!

Run your own "little Indianapolis" car races! These midgets, easily made, are perfect for the young modeler

Speed Bugs from Buffalo

■ A mite in size but a giant in performance is our *Speed Bug*. Whipping around its 12-foot circle at almost unbelievable speed, this little car has become one of our favorite models.

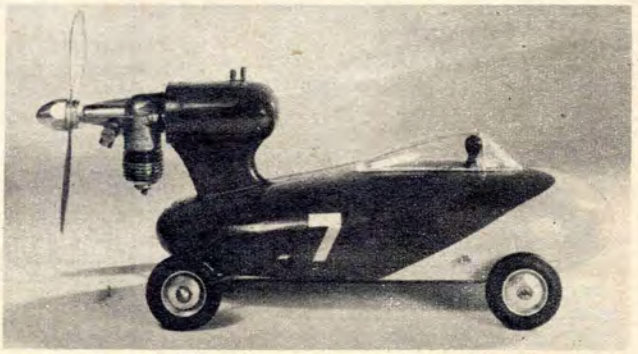
Although the position of the motor requires a pusher propeller, it makes adjustments much easier and is also very clean running. While the prop shown works quite well (be sure to bend blades correctly) if you want to turn out a hand-carved prop it would be even more efficient. The builder may carve the balsa top piece to any shape he desires; don't change the position of the wheels or motor mount.

S.B. is so easy to build that very few directions are needed. The pine bottom may be cut with a jigsaw or with a coping saw as we did. Pylon is cut to shape, firewall is glued on and balsa pod pieces lightly glued to pylon. Shape the pods as shown on plans, then remove and hollow the left pod for the fuel tank. Glue nuts to back of firewall or solder to a tin plate. Using plenty of glue, replace pods on pylon. Balsa top is glued to bottom, carved to shape; pylon added.

You may now dope and trim, install wheels and axles, glue on canopy, attach screw eyes.

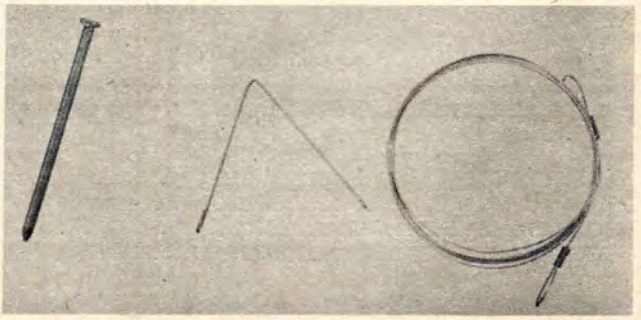
The bridle is formed from a piece of .045 music wire, 7 inches long, bent in a V, with hooks bent on each end for attaching to screw eyes. The cable we use is "Pylon" (B & C wing) lead-out wire, which is just the right length and has ready formed loops at each end. A four inch spike for the center post completes the set-up.

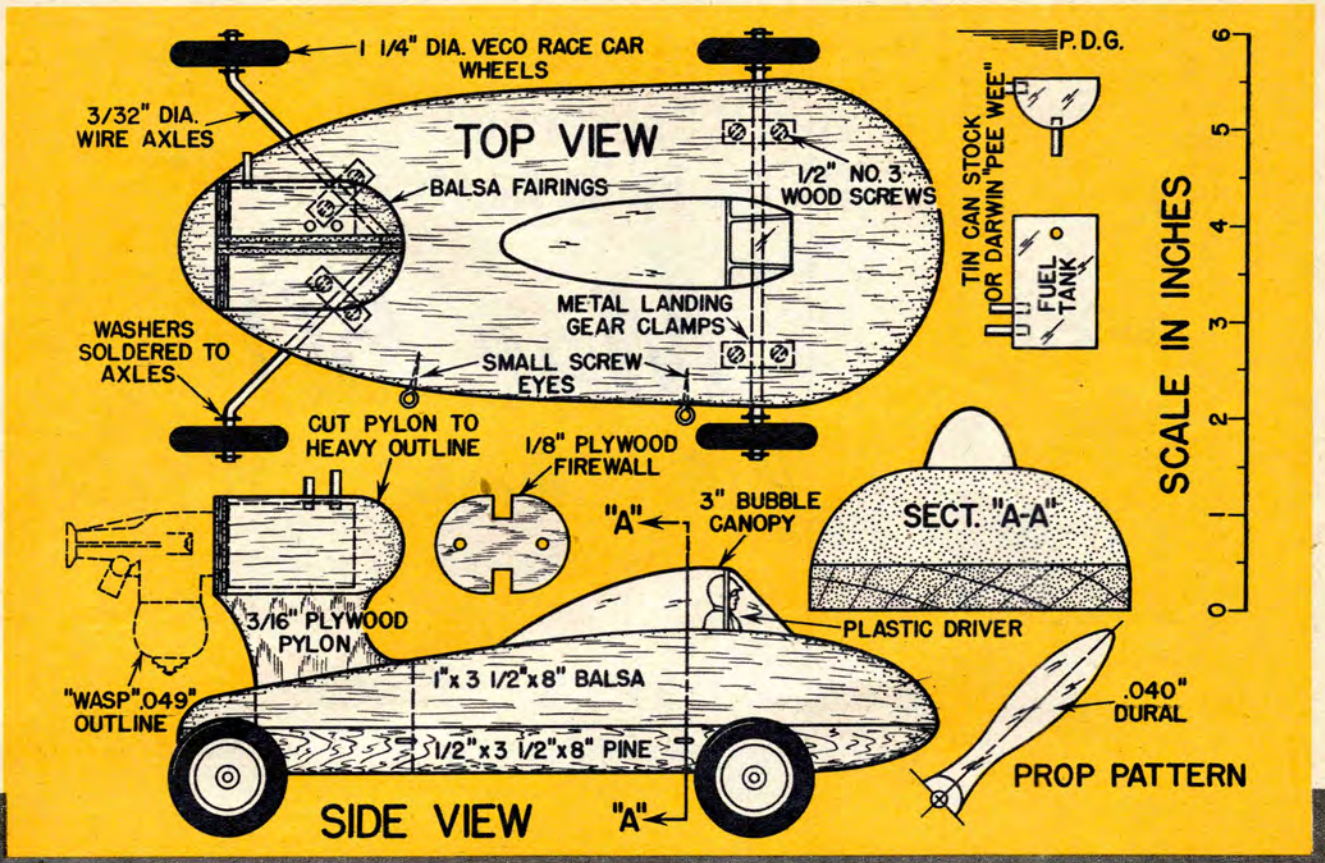
A word of caution is advised when installing motor. Make sure motor mounting bolts are not too long, or they may be forced into fuel tank when tightened.



Just about any Half-A glow plug or diesel powerplant will fit Speed Bug with only minor modifications required in pylon mount. A carved pusher prop would step up performance if desired.

All you need to get your race in operation: large spike to drive into parking asphalt (don't forget to pull it out when the race is over!), music wire bridle, flexible lead-out wire.





By Harold R. Nesbitt

Full-size plans for Speed Bug are part of Group Plan # 854 from Hobby Helpers, 770 Hunts Point Ave., New York 59, N. Y. (50c)

Trick Stuff:

What's Your Favorite Trick? Cash Prizes!

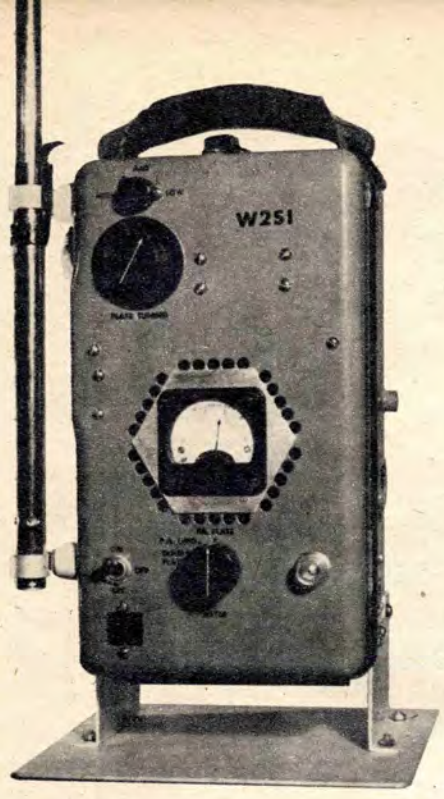
We're asking readers to send in their favorite original magic tricks. Air Trails HOBBIES will pay $25.00 for each one illustrated here. All you have to do is furnish us with a description of your favorite feat, include rough diagram or sketches if required. Send to "Trick Stuff" Dept., c/o Air Trails HOBBIES For Young Men, 304 East 45th St., New York 17, N. Y.

The lady said she can float a burning candle in water, and does it!

It's a known fact that paraffin, being lighter than water, will float. The trick here consists of making the candle float upright, and just high enough so that the wick is a fraction of an inch above the surface. This is done by weighting the bottom of the candle with a nail or a wood screw . . . the latter was used here. The subterfuge is then concealed with some melted wax to make the candle look unaltered.

Can you stand an egg on end without cracking the shell?

Before the company comes, put a mound of salt under the table cloth. The salt makes a soft nest in which the egg will fit nicely. But make sure that the mound is not obvious or you'll be found out.



Mac II Conversion for the Radio Amateur:

"Mac 50" R/C TRANSMITTER

By HOWARD G. McENTEE
W2SI

■ We have heard from quite a few "hams" (licensed amateur radio operators), who ask for some data on a good 50 mc. transmitter for R/C work—one that will have reasonably good power output and ample stability. Of course, there are lots of opinions as to what "good power output" may be, but we feel this unit has plenty of pep for most R/C uses.

The Mac II transmitter, which was based upon a two volt power supply, has proven so reliable and popular that we decided to convert our own Mac II, rather than make a whole new unit. While the supply of PE-157 power units around which this transmitter is built is not too good, you can, of course, use heavy-duty dry batteries, and there are several 2 V. power supplies now on the market that will serve. For full output of which the transmitter is capable, you will need a power supply that can furnish about 170 V. at 48 ma., which is what our version runs at, with a fully charged 2 V. cell.

The original power supply was used, but a few modifications were made to increase output. First, the rubber-covered lead from the cell was discarded, and the entire low voltage circuit from cell to pin 7 of the vibrator and to the red lead from the power transformer was reconnected with really *heavy* wire. Auto primary wire is ideal for this purpose. The original toggle switch was replaced with a low voltage job, made for airplane use at high current. No fuse is used.

Next step was to replace the filter choke that came with the PE-157 power supply, and which had been installed in the Mac II with a low resistance unit. A Stancor #C-2327 was used here; it's a little job called a television replacement choke, and has very low resistance. These changes pepped up the power supply a lot (users of the Mac II on 27¼ mc. might try the same, if they feel they are not getting full power output).

The RF portion of the transmitter must be completely rebuilt, and very few of the original parts are usable in the new 50 mc. version. We wanted to retain the stability of crystal control, and tests were made with a 3S4 tube using a 50 mc. crystal, to drive the amplifier. This was pretty touchy, and left no margin of safety; 50 mc. crystals have very little output and must be lightly loaded. We decided, therefore, to go to the circuit shown here, which utilizes a 3A5 as a crystal oscillator and doubler. This is very economical on B power, and has plenty of output. In fact, the 3A5 runs at such low power input that it can be considered to be just loafing. R8 on the diagram serves to cut the output of V1, to give the proper amount of grid current to V2.

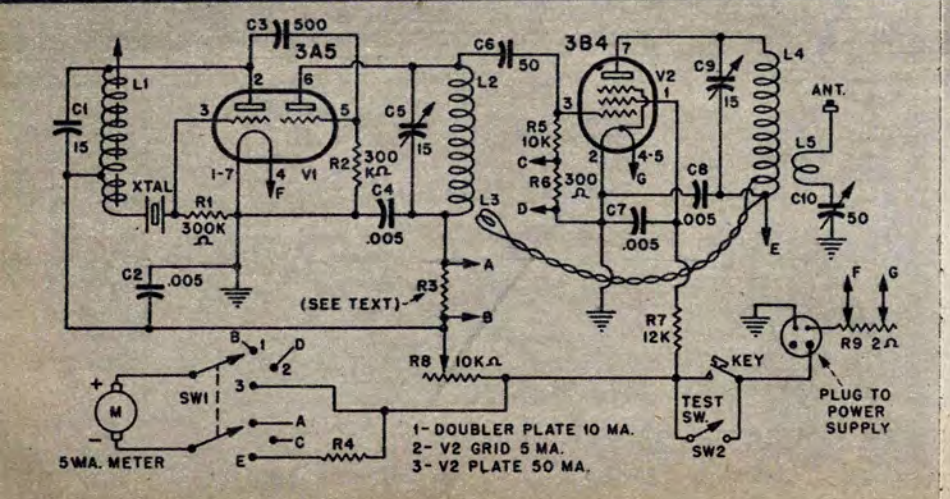
In order to handle the full power of which the 2 V. supply is capable, we installed a 3B4 output tube, which is something like a 3A4, but more efficient at 50 mc. It does a nice job, but has to be neutralized (as do all other battery tubes that might be used in its place). Inductive neutralization is used; twisted hookup wire is connected across two turns of L4, and terminates in a two-turn loop that may be moved near the end of L2.

A drawing of the aluminum chassis is given, with the location of the main components marked. Both tubes have shields, mainly to keep them in their sockets, while the set is being transported. It was found convenient to use a slug-tuned coil at L1, but the conventional condenser and coil combination worked better for L2. Note that R5 *must* be a wirewound resistor, preferably of the make specified. Other makes will be larger. This resistor is a wirewound type, and also acts as a fairly good RF choke.

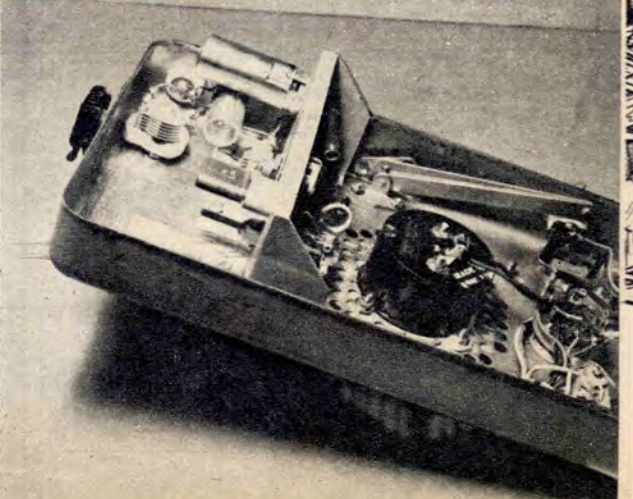
The 3B4 filament must be operated on 1.25 V., while V1 requires 1.5 V., so two sliders must be used on R9. The voltages should be set with a fully charged cell, and it will do no harm to have them a little high, so that they are still reasonably close, when the cell voltage drops a bit.

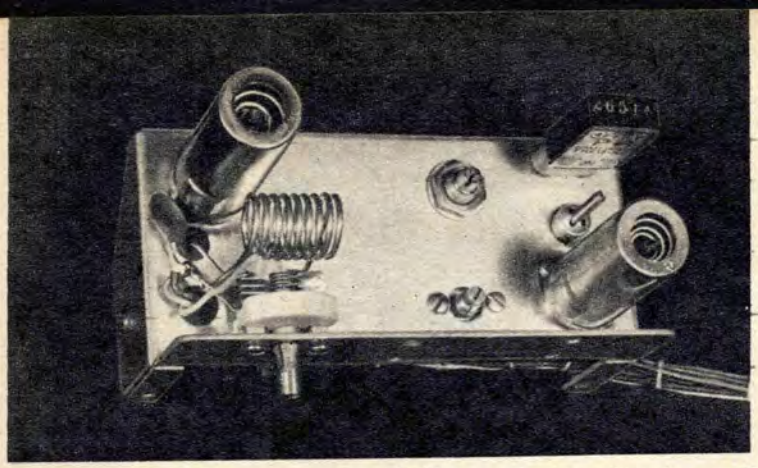
In order to make tune-up easier, a 5 ma. meter has been installed, and a rotary switch allows it to be connected

3A5 is used as crystal oscillator and doubler

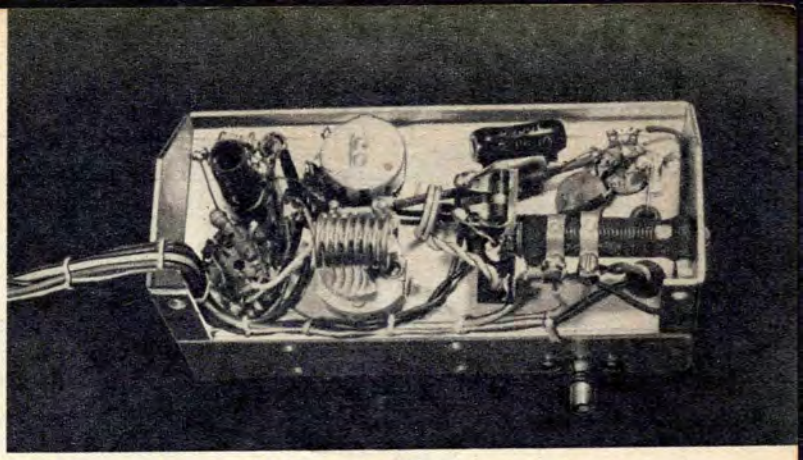


Surplus PE-157 unit with modifications





Crystal here no longer available; one in transmitter has small sealed metal case. C8 is grounded to lug under socket rivet.



Underside of R.F. chassis. Filament dropping resistor has two sliders. R8 is at upper center, coil L2 directly below resistor.

across several circuits in the transmitter. The particular meter used came with a 50 ma. shunt; this range is used to measure V2 plate current, and the shunt is mounted right on the switch. Position 1 indicates doubler plate current, and for this we needed a 10 ma. range. The necessary shunt, R3, comes out to about 6 ohms for this particular meter. However, it must be measured for each meter. The shunt was made of resistance wire from an old wirewound rheostat. (The process is shown on p. 57, Sept. '53 A.T.)

The entire transmitter is "keyed," to send out signals and cut them. A test switch is mounted on the front panel, and there is also a socket for a plug from the external pulser (not shown on the diagram). SW1 is mounted in the hole where the key jack used to be.

All RF parts except L5 and C10 are mounted on the chassis, and this unit should be completely wired before it is fastened on the panel. When you arrive at this point, temporarily connect a blue bead pilot lamp (No. 44) from the antenna terminal to the case. Having made sure that the filament voltage to both tubes is correct, set the rotary switch to position 1 and turn the core in L1, till you see the plate current wobble a bit. Then turn SW1 to position 2, and adjust L1 and C5 to get the highest reading. While making these adjustments, it is wise to open the screen grid circuit of V2, so that this tube won't draw excessive current, since it will be untuned.

With R8 at zero resistance, you should be able to get a reading somewhere around 2 ma., with SW1 in position 2. Be sure you have a good crystal; the crystal range is 26-27 mc. We used a Petersen Z9A unit here, with fine results. This takes a socket with small diameter pins, but some other types have large pins, so make sure you get the right crystal socket.

Now comes neutralization, which is very simple. With the screen circuit of V2 still open, and L1 and C5 tuned for highest reading (SW1 still on position 2), rotate C9 through its range. At some point you will doubtless find that the meter needle gives quite a kick. Try moving L3 nearer L2, and repeat. When L3 is in the correct position, you should be able to turn C9 to any setting, without seeing the slightest bit of meter movement. In our case, L3 is about ⅜" from the end of L2, and somewhat off center. L3 has to be the correct way around; if you find that the meter kicks no matter where you have L3, just flip it around so that the other side faces L2, and try again.

When fairly close neutralization has been achieved, you can put V2 into action; for normal operation, we find that a grid current reading of about 1.3 ma. is ample. Tune C9 to resonance (lowest plate current reading), and if it shows plate current lower than about 26 ma., readjust C10 and try again. We find that L5 has to be very closely coupled to L4, to get proper loading. It is impossible to get too much loading, since it can always be cut down by use of C10.

As with any other transmitter fitted with a quarter wave vertical antenna, this one has to be standing upon the ground, or some fairly large metallic object, to load up properly. Also, it loads better when fitted with a good sized "base plate," as recommended for the Mac II. Our base plate measures only 8" square, and could well be larger. A quarter wave at this frequency is about 4½', so your antenna should be at least this long, as measured from the top insulator, where it connects to L5. The procedure for tuning C9 and C10 is exactly the same as was described for the Mac II, so will not be repeated here. Most hams are well acquainted with the necessary steps to take.

As a help in comparison of results, the voltage and current readings taken on this transmitter, when properly tuned up and loaded, are as follows: high voltage —170; plate current of V2 (SW1 in position 3)—28 ma.; screen grid current of V2—7.25 ma.; grid current of V2 (SW1 in position 2)—1.3 ma.; plate current of the doubler (second section of V1 SW1 in pos. 1)—4.4 ma. The oscillator current will be about 3 ma., with a good crystal. With the above readings, power into a pilot bulb is about 2 W., which represents pretty fair overall efficiency, considering the tubes used. We have found that the transmitter keys just as fast as required for pulse work, or to use with a fast beep box. Total current drain from the storage cell is about 7 A., so it is wise to keep a close check on the charge, by watching the indicator balls. At that, current drain is only an amp. or so higher than it was with the old Mac II circuit, when the 3D6's were loaded up for highest output.

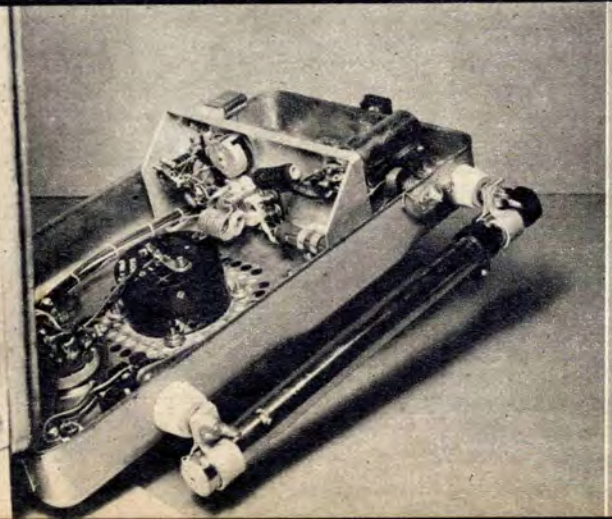
Parts List

(Only parts needed to convert Mac II to 50 mc. are listed.)

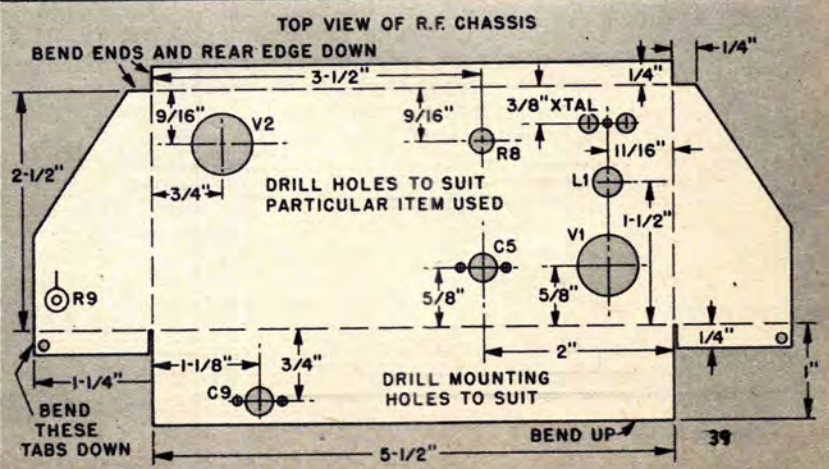
1 new aluminum chassis, see dwg. 2 7-pin miniature sockets with metal shields to fit. M—5 ma. meter, 2" size, with 50 ma. shunt (Electronic Spec. Supply Co.). 1 antenna, at least 5' long. 1 socket for crystal (Control Research). V1—Raytheon 3S4. V2—Raytheon 3B4. C1—15 mmf. ceramic, CRL D6-150. C2, C4, C7, C8—.005 mf. ceramic, CRL DD502. C3—500 mmf. ceramic, CRL

(*Continued on page* 85)

Same unit shown from left side



Chassis drawing is exactly half-size



The Dramatic Story Behind the Hobby Boy of America

For the past three months HOBBIES' readers have been constructing models of the famous B-Bar-B Ranch buildings; the hobby project culminating in a Big Mutual Broadcasting System contest in which a real gold mine, a 4-year college scholarship and 130 other valuable awards were offered for the best models of the entire B-Bar-B Ranch. To acquaint those who have participated in the contest, Air Trails HOBBIES commissioned David Cooke, noted author and magazine contributor, to write for the first time the story of young Benson. You can follow Bobby Benson and his "Songs of the B-Bar-B" program on Mutual Broadcasting System. Check your local program listings for time.

How Bobby Benson became the boss of the B-Bar-B Ranch and radio's #1 "cowboy kid"

■ If you ever travel down through the Big Bend section of Texas, you'll want to stop in at a rolling cattle ranch situated between the lazy Rio Grande and the Big Bend National Park. That is, you'll want to see the ranch if you're a real dyed-in-the-saddle Western fan, for the name of the ranch is the Bee-Bar-Bee. You'll also want to spend some time visiting with the busy boss of the spread, for he's the Number One "cowboy kid" of America and probably the youngest full-fledged rancher in the entire Southwest.

We're talking about Bobby Benson, of course. You may be one of the 400,000-odd members of his Bee-Bar-Bee Hobby Club, or maybe you're one of the tens of thousands who couldn't get into the club when the Mutual Broadcasting System, which airs the Bobby Benson show three times a week, was forced to close the roster because they ran out of filing space. Or perhaps by some remote chance you are among the handful of uninformed people who haven't even heard of Bobby Benson and his famous Bee-Bar-Bee Riders. If this is the case, you have our sympathy for missing a whale of a lot of grand entertainment.

But no matter which category you fall into, the Welcome Mat will be out for you at the Bee-Bar-Bee. And chances are that before you leave Bobby and his pals to travel East, West, or North again, you'll be treated to the most luscious, mouth-watering barbecue dinner you ever dreamed of.

Tex Mason, Bobby's guardian and foreman of the ranch, explains it this way, "Bobby and I figure that barbecue and other good things have to be shared to be really enjoyed. That's the reason we always leave the front gates open for anybody who wants to visit us for a spell. We get as much enjoyment out of having people here as they have in coming."

And there are certainly a great number of things for a "tenderfoot" to see on the Bee-Bar-Bee. The most important of these, of course, are Bobby and his pals. The "little boss," as his hands call him, is as friendly as a warm room on a cold winter day. He's bright-eyed and eager, a 65-pound package of dynamite who has remained completely unspoiled by his radio fame. And Tex—well, he's just what you would expect a tophand to be. Tall and straight and browned from the Texas sun, he doesn't smoke or drink and he speaks in a soft voice that carries a lot of authority.

Unlike most ranches in the West, the Bee-Bar-Bee has gone completely modern. They still use branding irons and a chuck-wagon, of course, but the ranch now boasts two helicopters in addition to jeeps and trucks. Bobby and Tex are even trying to get permission to install radar, so that they can keep an eye on their cattle without having to be out on the range.

"I was against the helicopter idea at first," Tex says, "but now I wonder how we ever got along without them. I wouldn't be surprised if the other ranchers around here put in orders for helicopters too, seeing how much work we've been saved by them."

"They've saved more than work," Bobby put in, grinning broadly. "Tex wouldn't tell you this—he's too modest—but the first week we had the helicopter here he used it to round up a gang of rustlers."

"Rustlers?" your reporter said, feeling sure that he was getting his leg pulled Texas-style. "You wouldn't try to kid me, would you, Bobby? Everybody knows they went out with the Concord stagecoach!"

"Don't you believe it, mister," Tex Mason said in that quiet way of his. "Rustling never died out, and with the high beef prices of the post-war years it's been coming back stronger. The ranchers around here lost a couple hundred head of cattle before we were lucky enough to stop the rustlers."

"Don't you pay any attention to that 'we' stuff," Bobby went on. "Tex is the hombre that did it—and all alone. With the use of the helicopter, of course. That's what made him agree to buy the first one."

But while Bobby believes in improvement and modernization, his golden palomino, Amigo, is still his most important possession. And the youngster is such an accomplished horseman that he trained Amigo himself after Ginger, his previous horse, broke a leg and had to be destroyed. Amigo is now so attached to his owner that he refuses to allow anyone else to ride him. Even Tex, who is as good a bronc-buster as any ranch hand in the Big Bend section, has never been able to stay on Amigo's back for more than a few seconds before being thrown.

But Bobby's ability with horses is no accident, for he learned to ride about the same time he learned to walk—and therein lies a tale as strange as any that ever came out of the Old West. Tex told us about it when his little boss stepped out of the ranchhouse.

"You know," he said, "Bobby's name is neither Bobby nor Benson. At least, they weren't his original names. I reckon nobody but the good Lord knows what his real name is, or what happened to his parents."

Tex walked to the window of the ranchhouse and looked outside. "Bobby knows all this, of course," he said, coming back again, "but I don't like to talk about it in front of him because it makes him think too much about old Bart Benson, and thoughts like that could make him unhappy."

Tex explained that Bart Benson had struck it rich about fourteen or fifteen years ago when he found a lode of gold some place in the Los Chisos Mountains. "At least, people always figured that Bart had his mine up in the Ghost Hills, though he never told anybody the exact location." In any event, he had more than enough money to buy everything he ever wanted except one thing—a son.

"Well," Tex went on, "old Bart never could settle down and he continued prospecting, just to keep busy. One day he was out on the Painted Desert near Terlingua when he saw something on the sand. It was a baby boy not more than a year old." He nodded toward the door of the ranchhouse. "It was Bobby."

They had told us this same story back at the Mutual Broadcasting System offices in New York, but it was still hard to believe and we asked all the obvious questions.

"Nobody knows how long Bobby had been there or where his folks were or what had happened to them," Tex said. "Bart spent a long time and a lot of money trying to locate Bobby's parents but never had any luck. Or maybe it was the other way around," he added thoughtfully. "Bobby was the best thing that had ever happened to Bart, and he decided to settle down and raise the little fellow as his own son. That's when he bought the Bee-Bar-Bee and asked me to come with him as foreman, since he didn't think he knew enough about cattle raising himself."

We asked what had happened to Bart Benson, and a hard look came into Tex's face.

"Some dirty sidewinding outlaw shot him down when Bobby was only about eight years old," he said. "But before he died, Bart made me promise to stay on at the ranch and look after Bobby and see that he got a good education. I don't know how good a job I've done so far as a guardian, but I've tried my best. Bobby goes off to school every day at Cactus City, and we've taught him other things here at the ranch. He is brave and has learned discipline and rarely does anything foolish. He's got a good sense of humor—that comes mostly from Windy Wales' constant joking—and Harka has taught him all the Indian tricks of tracking and staying alive on the desert without food or water. Irish has helped a lot too, and Bobby respects him because he used to be on the police force in New York."

Tex was very willing to give information when it came to talking about others, but he was modesty itself concerning his own background. However, during the two days we spent at the ranch we discovered that his life has been packed with interest and adventure. To give a quick run-down:

About 34, he's a direct descendant of one of the men who died defending the Alamo. During his high school days he won first prize three years running as the best scholastic rifle shot in Brewster County, "the largest county in the largest state." After graduation he attended Texas A & M College, where he majored in animal husbandry, and then spent a year or so competing in rodeos and giving trick-shot demonstrations with his six-guns. During this period he met old Bart Benson and they became such fast friends that Tex gave up his rodeo career to take over foremanship of the Bee-Bar-Bee.

Then came World War II, and Tex enlisted in the 7th Cavalry. A short time later he transferred to the air cadet school and won his wings, after which he was shipped out to the South Pacific for combat operations against the Japanese. He won plenty of honors.

After the war he returned once again to his old job at the Bee-Bar-Bee. Everything went along smoothly for a while, and then Bart Benson was killed. Tex immediately asked Sheriff Bancroft of Cactus City to deputize him, and he hunted down the killer in real Western fashion and brought him in for trial. Since that time, Tex has been both father and pal to young Bobby.

When Bobby came back into the ranch house again he said, "Maybe we'd better eat lunch early today, Tex. Our visitor must be starved after his long trip."

"Sure thing, son," Tex said. "What'll it be today?"

"How about the Bee-Bar-Bee Special?"

"Oh, no," Tex groaned. "Not that!"

"Aw, be a sport," Bobby pleaded. "It'll be something different for him."

"You can say that again!" Tex exclaimed. 'Different' is the only word for the Special!"

We asked what was so special about the Special, and Tex said, "You'll see soon enough."

"But Windy likes it," Bobby laughed, "and so do I." He turned to your reporter and explained, "We used to call it the Lone Star Gold-And-Brown Honeydew Flip, but that was too much of a mouthful and we shortened it to the Bee-Bar-Bee Special. It's one of Windy's inventions."

We found out soon enough what was so "different" about the Special. For any of you readers who would care to give it a try, here's the way it goes:

Take a "small" order of pancakes (about eight or ten) and stack them with plenty of butter between each one. On top of this place a fried egg with a soft yolk—and smother the entire concoction with maple syrup.

Sounds horrible, doesn't it? But believe it or not, it's really delicious—after you work up enough nerve for the first taste.

That afternoon Bobby took us down to the bunkhouse, where we met the rest of the radio gang. Walter Wellington Wales, otherwise known as Windy, was just what you might expect—as thin as a rail and with a grin that split his face from ear to ear. He came to the Bee-Bar-Bee just about the same time as Tex Mason, but where Tex is quiet, the only time Windy stops talking is when he has to take another breath. The way he tells it, he's wrestled grizzlies, dug for gold in Alaska, been a deputy sheriff, sheriff, and even a marshal.

"Windy's a great story-teller," Bobby said, grinning. "But take my advice and don't believe a word he says!"

"Now, is that a nice thing to say, little boss?" Windy complained in a hurt voice. "You know I wouldn't fib for love nor money. That's the reason they used to call me Walter 'Honest Abe' Wellington."

"Windy!" Bobby accused. "There you go again!"

"Well—er," Windy stammered. "Well, doggone, mebbe—just mebbe, mind you—I might stretch the truth a mite little bit once in a great while. But that ain't fibbing, is it? You know I wouldn't downright lie, little boss, would I?"

"Of course not—not *downright*," Bobby laughed. "But the way you stretch the truth sometimes . . . wow! Like that time you swore you dug a tunnel clear through the earth to China."

"But I did," Windy insisted. "That warn't no lie. I dug me a hole smackdob till I hit China."

"Windy!" Bobby said again. "Don't forget—the truth!"

"But it *is* the truth, little boss," Windy insisted. "I dug and dug and dug, and before I knew it, I'd struck China." He chuckled as if he'd pulled a good one. "Only I forgot to tell you before," he added, "this here china I struck was only an old coffee cup that didn't even have no handle on it any more!"

We saw what Tex Mason meant when he said Windy was full of cracks.

Harka is another stalwart of the Bee-Bar-Bee. He has known Tex since Tex was a small boy himself, and at one time they went through the Yaqui Indian ceremony of blood brothership. He doesn't do a great deal of talking, but when Bobby's around he watches the youngster like a hawk. And it's easy to see that he approves.

Then there's Irish, whose real name is Terrence Kelley. He appeared at the Bee-Bar-Bee about three years ago, and though he wears a Stetson and levis, he still looks more like a cop than a ranch hand.

"And that's the gang," Bobby said, "all except Cactus Carl Warren. He was sent down here to the ranch by the Mutual Broadcasting System to be our announcer, and he's really a swell person. I wish you could have met him, but he had to go up to station KVLF in Alpine for a few days to get some new radio equipment."

"Now wait a minute, son," Irish put in. "Don't let this gentleman think there aren't any other hands here on the Bee-Bar-Bee. Reporters can write up only what you tell them, and we want him to get the story right."

"Of course," Bobby said. "We've got several other men here, but they don't appear on the radio show except once in a while. Right now, most of them are out on the range or taking care of other chores."

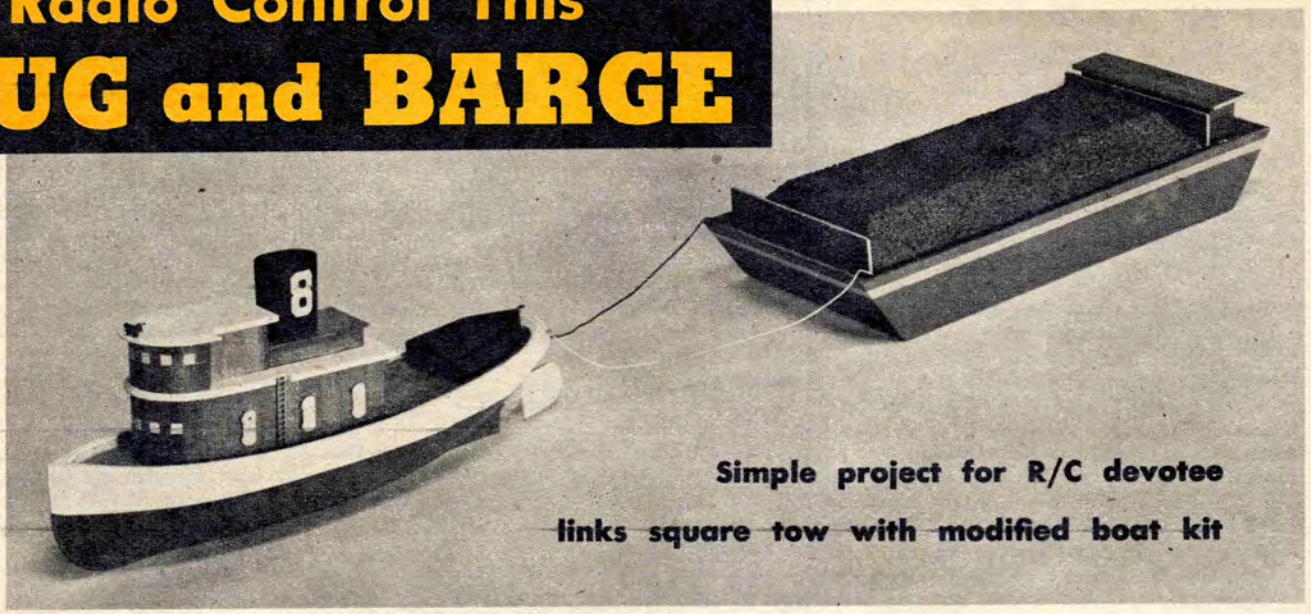
The next day was Sunday, and we all rode up to Cactus City. Your reporter has always been far more adept at riding in taxis than on horses, but Windy brought out a swaybacked old mount anyway and Tex rustled up a pair of levis.

Since there was no speedometer on the dashboard of the swayback we had no way of telling how far it was to Cactus City, though the ride seemed like an easy 500 miles.

After church services we rode back to the ranch again, and when we arrived at the ranch house your reporter had a smarting sunburn in a region of his anatomy that had not so much as been touched by a single ray from Old Sol.

And that—aside from an out-of-this-world barbecue when the sun went down—just about rounded off our trip. Before we had taken off from LaGuardia Field in New York such a short time ago, Bobby Benson and his gang had been just another job to be gotten over with—an interview to make, a story to write. But now we admit that we're Bobby Benson fans right up to the hilt and can hardly wait for his next show.

Radio Control This TUG and BARGE

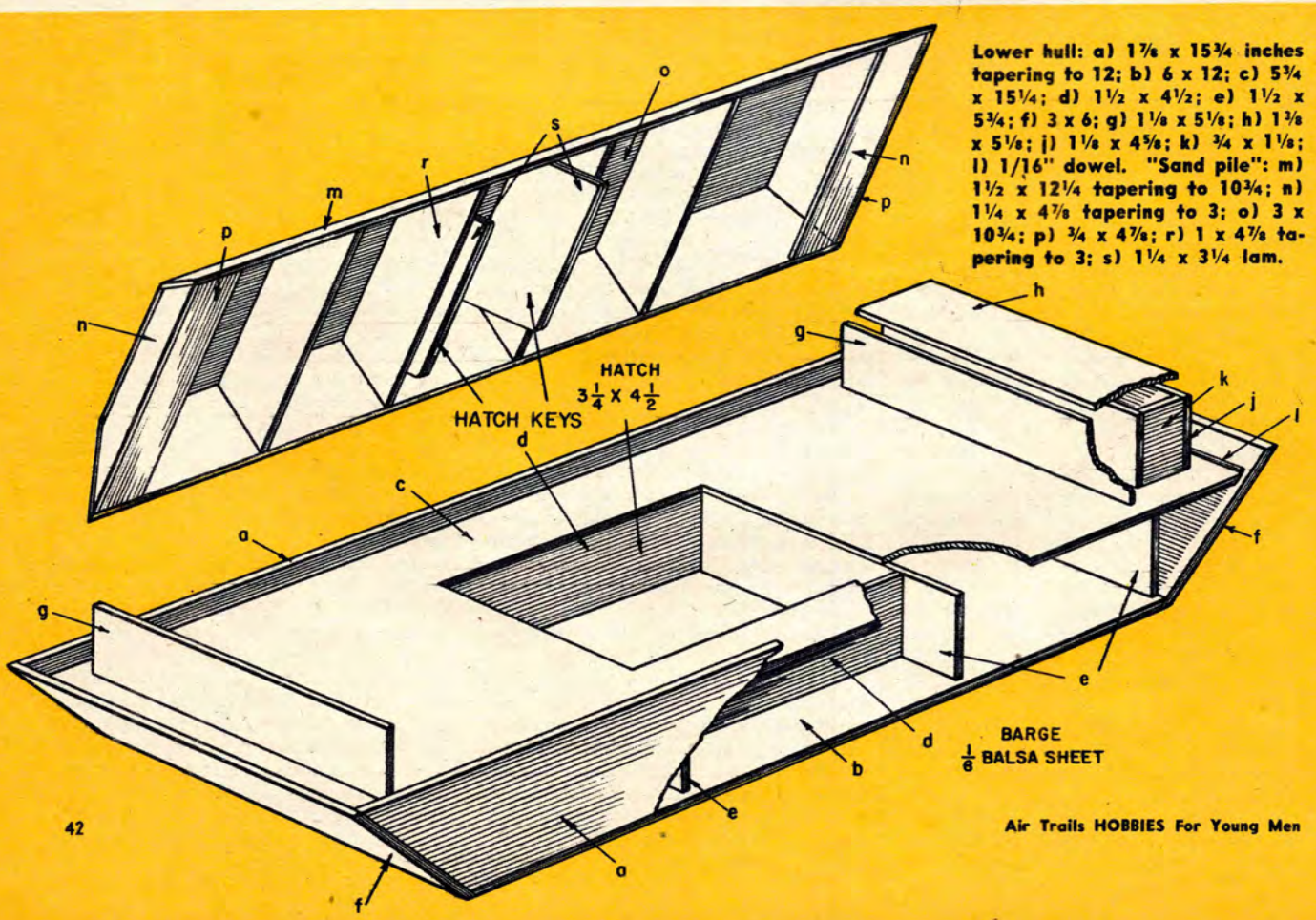


Simple project for R/C devotee links square tow with modified boat kit

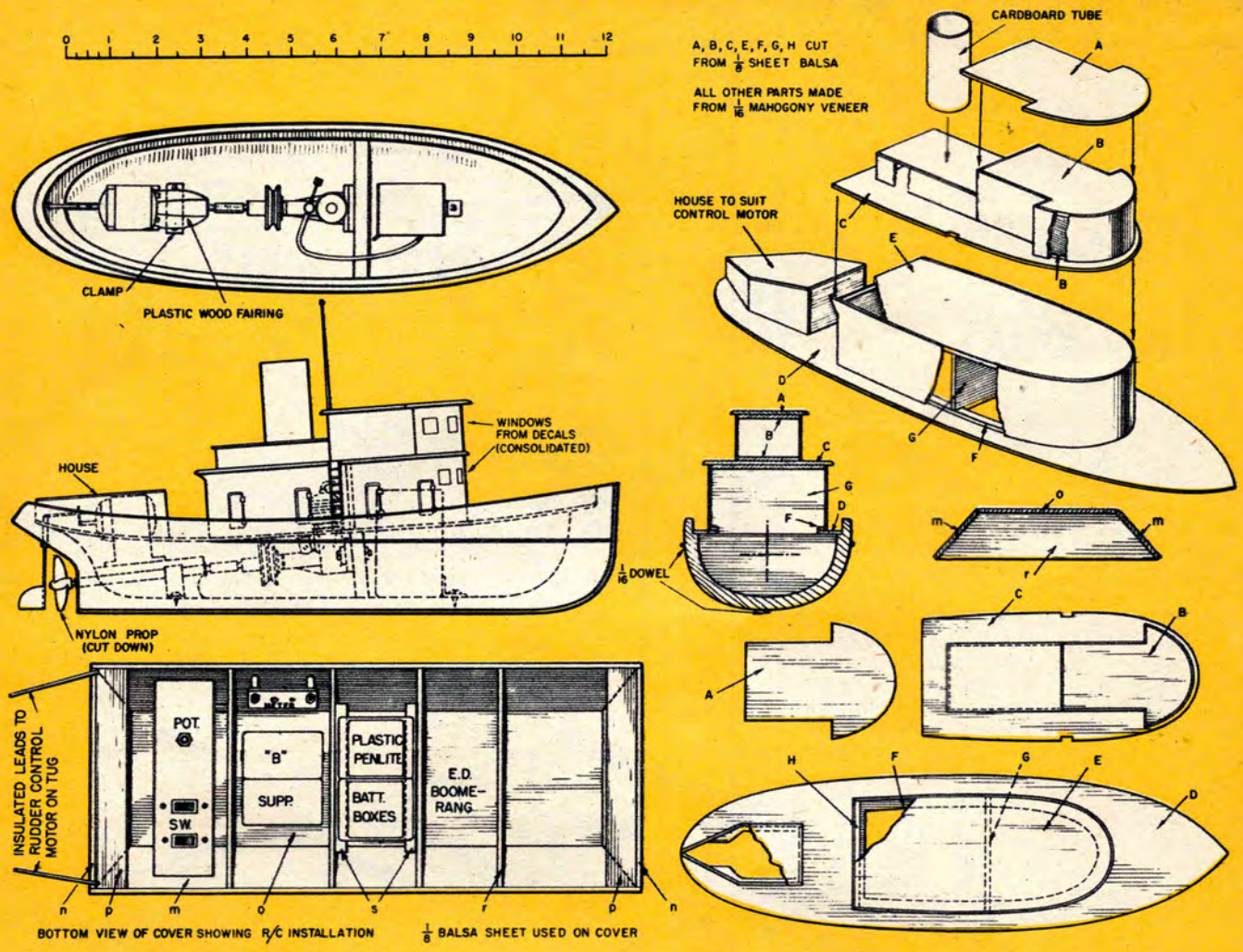
■ Just about the easiest project ever designed for a novice radio control boat fan is this barge and tug combination. The tug is Model Shipway's Despatch #9 modified to take a McCoy .049 diesel engine, a Froom fuel tank and Sterling's set of fittings including a cut-down Sterling nylon prop. Wilson's small electric motor used to actuate the rudder is housed in a special compartment on the aft deck. Since no commercial rudder fitted just right, that shown was fashioned from a tin can.

You need an electronic pulser to operate your transmitter for the proportional control of the tug rudder. The receiver installed in the test combination was the 27¼ mc. Boomerang. All radio components are housed in the barge cover which is quickly removable and disguised as a sand pile. You do this easiest by applying heavy dope to the balsawood and sprinkling on bird gravel.

If you work from the Model Shipways kit the hull must be hollowed. A ½" gouge was found most satisfactory for that job. That bridle tow system is just like an actual set-up on full-size barges. The prototype tug, incidentally, was built in Tampa in 1945 and today tows oil barges on California rivers.

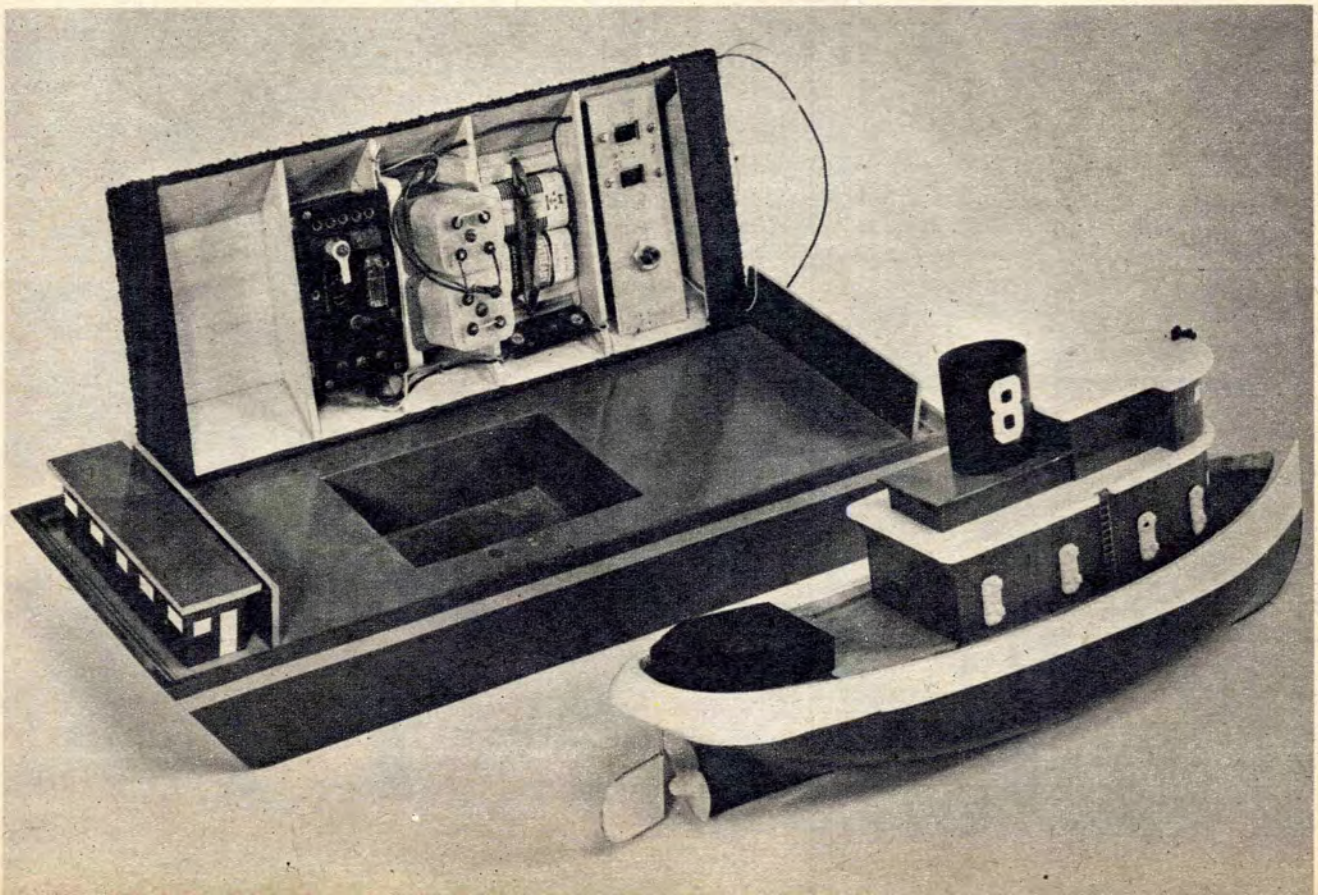


Lower hull: a) 1⅞ x 15¾ inches tapering to 12; b) 6 x 12; c) 5¾ x 15¼; d) 1½ x 4½; e) 1½ x 5¾; f) 3 x 6; g) 1⅛ x 5⅛; h) 1⅜ x 5⅛; j) 1⅛ x 4⅝; k) ¾ x 1⅛; l) 1/16" dowel. "Sand pile": m) 1½ x 12¼ tapering to 10¾; n) 1¼ x 4⅞ tapering to 3; o) 3 x 10¾; p) ¾ x 4⅞; r) 1 x 4⅞ tapering to 3; s) 1¼ x 3¼ lam.


0 1 2 3 4 5 6 7 8 9 10 11 12
CLAMP
PLASTIC WOOD FAIRING
HOUSE
WINDOWS FROM DECALS (CONSOLIDATED)
NYLON PROP (CUT DOWN)
INSULATED LEADS TO RUDDER CONTROL MOTOR ON TUG
POT.
SW.
"B" SUPP.
PLASTIC PENLITE
BATT. BOXES
E.D. BOOMERANG
n p m o s r p n
BOTTOM VIEW OF COVER SHOWING R/C INSTALLATION
A, B, C, E, F, G, H CUT FROM 1/8 SHEET BALSA
ALL OTHER PARTS MADE FROM 1/16 MAHOGONY VENEER
CARDBOARD TUBE
HOUSE TO SUIT CONTROL MOTOR
1/16 DOWEL
1/8 BALSA SHEET USED ON COVER

All receiver equipment and batteries are positioned in the top "sand pile" section of the barge to make it easily accessible and dry.

Tug modifications are shown in the sketches above. A comparison of this with the kit plans will indicate the necessary changes.

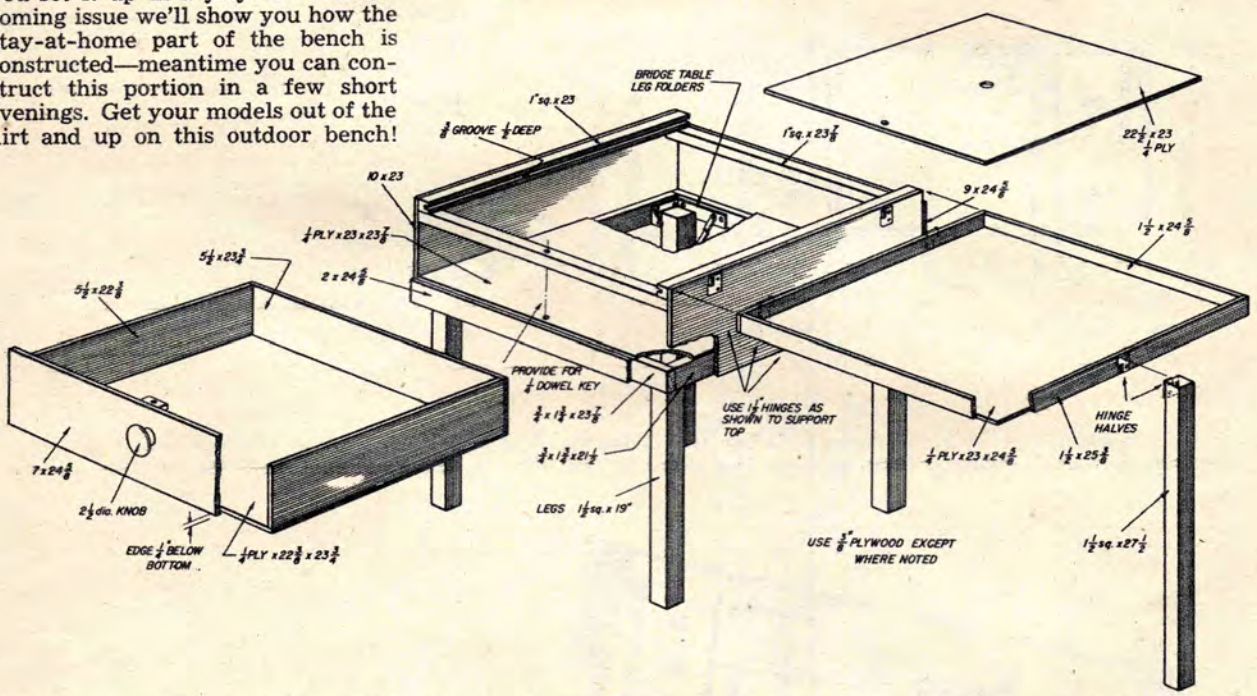


HOME and SCHOOL WORKSHOP PROJECT:

Portable Work Bench-Tool Box

■ Designed to fit into the trunk of any normal-sized automobile, this combination tool box and work bench is a portable affair that does double duty. At home it's a part of your model building bench. When you're off to "sea" or fly your models, you just lift out the drawer of tools, put it in your car and at the field you set it up in a jiffy. In a forthcoming issue we'll show you how the stay-at-home part of the bench is constructed—meantime you can construct this portion in a few short evenings. Get your models out of the dirt and up on this outdoor bench!

For model boating or flying the enthusiast will find—for the first time—that he now has a worthwhile working surface and test stand with all his tools and equipment close at hand.

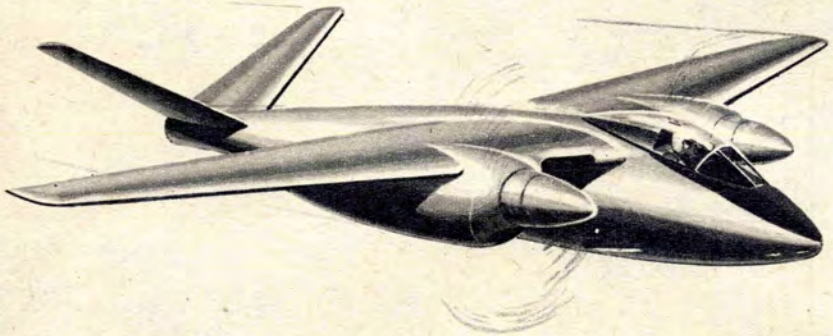

BRIDGE TABLE LEG FOLDERS
1" sq. x 23
⅜" GROOVE ½" DEEP
1" sq. x 23⅞
22½ x 23 ¼" PLY
10 x 23
9 x 24⅜
¼" PLY x 23 x 23⅞
1½ x 24⅜
5½ x 23¾
5½ x 22⅜
2 x 24⅜
PROVIDE FOR ¼" DOWEL KEY
¾ x 1½ x 23⅞
USE 1½" HINGES AS SHOWN TO SUPPORT TOP
HINGE HALVES
¾ x 1½ x 21½
¼" PLY x 23 x 24⅜
1½ x 25⅜
7 x 24⅜
2½ dia. KNOB
LEGS 1½ sq. x 19"
EDGE ¼" BELOW BOTTOM
¼" PLY x 22⅜ x 23¾
USE ¾" PLYWOOD EXCEPT WHERE NOTED
1½ sq. x 27½

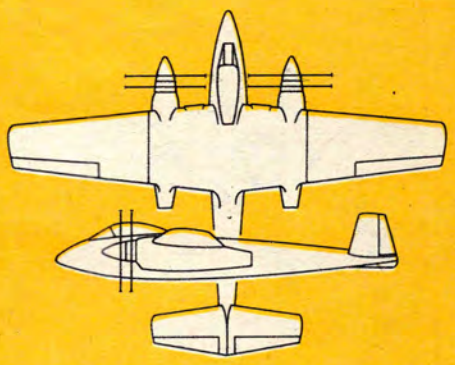
That "drawer" on the top left side of this handsome and practical work bench is your tool box at home and your tool box in the field.

Here is what stays at home when you go out to fly your plane or run your boat. The "missing" drawer section is the portable tool box.

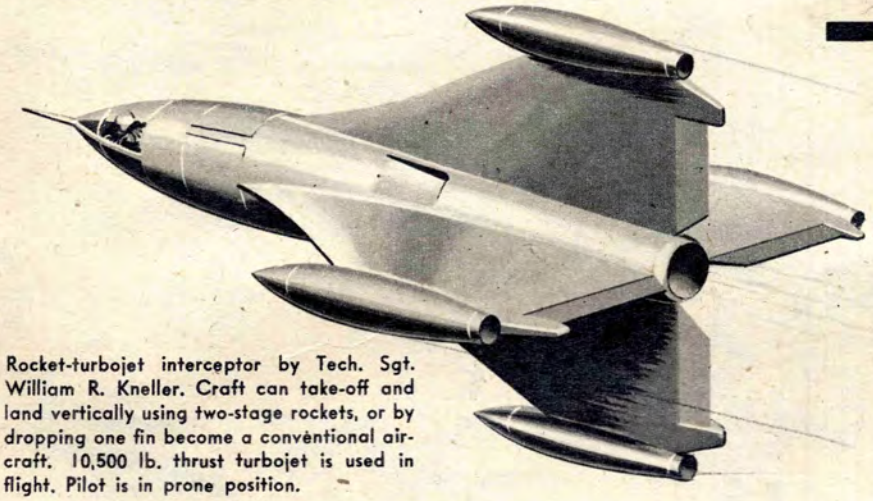
"ATH" AIRMEN OF VISION

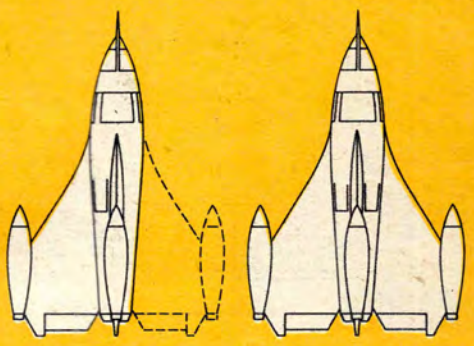
AIRCRAFT DESIGN COMPETITION



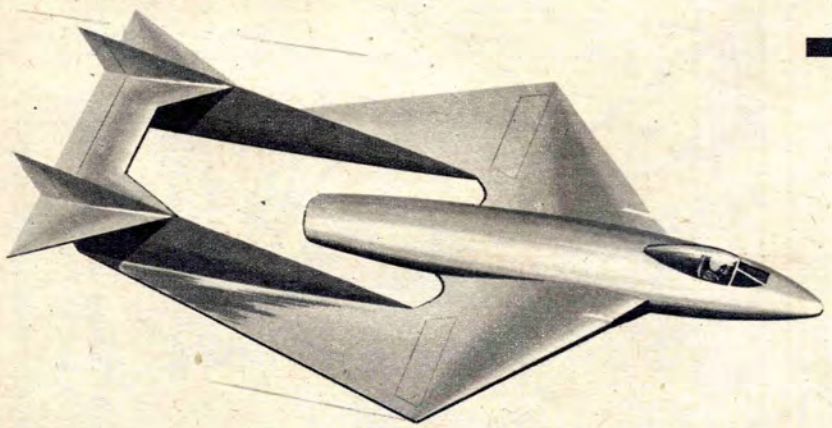


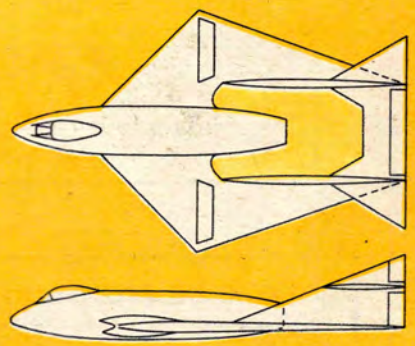
Lightweight, carrier-borne reconnaissance fighter by Giorgio Barilari of Brescia, Italy. Powered by two turboprop engines driving two contrarotating propellers each delivering a total of around 3500 hp, plus additional thrust from turbine exhaust. This plane weighs only 6000 lbs. when fully loaded and is capable of more than 450 mph.





Rocket-turbojet interceptor by Tech. Sgt. William R. Kneller. Craft can take-off and land vertically using two-stage rockets, or by dropping one fin become a conventional aircraft. 10,500 lb. thrust turbojet is used in flight. Pilot is in prone position.





Jet fighter by Larry Burchett of Detroit, Mich. An unusual design featuring a pentagon wing planform. Lateral control is achieved by spoilers. It is powered by a 10,000 lb. thrust turbojet engine and is capable of 720 mph. Armament consists of four 20-mm cannon.

Rules governing this competition are as follows: Three-view sketches of envisioned aircraft will be required. These should be not less than 8½ x 11 inches for the entire three views. Give sketches of complete airplane or space craft in three-quarter front and rear positions. Photos of a model of proposed design may be included. Information on powerplant(s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed. The design may be of any type; space craft, commercial, military planes (fighters, bombers, troop transports), planes for private flyer and sporting or racing arplanes. Entry each month judged most practical or of greatest significance will receive $50; $25 for second place and $10 for third. Mail entries to Airmen of Vision, c/o Air Trails HOBBIES for Young Men, 304 E. 45th St., New York 17, N. Y. The editors regret they cannot enter into any correspondence on submissions.

WE DRIVE Nash's Midget "Met"

By JOE WHERRY

Airscoop on hood is only for decoration. Forward visibility is good, 13 ft. 10 in.

BODY & CHASSIS SPECIFICATIONS

Wheelbase	85
Tread, front; rear	45 5/16; 44 13/16
Length overall	149 1/2
Width overall	61 1/2
Height overall	54 1/2
Ground clearance	6 1/2
Turning circle dia.	36 ft. (approx.)
Steer. wheel lock-to-lock	2 1/4 turns
Tire size	5.20 x 13
Weight (curb)	approx. 1875 lbs.[1]
Power to weight ratio	44.6 lbs. per BHP unit
Brake lining area	76.8 sq. in.
Brake lining area to weight ratio	24.4 lbs. per sq. in.

[1]Curb weight: car with gasoline, oil, floormats, spare wheel, jack, etc. This figure is for the tested Convertible model. Shipping weights are: Convertible, 1785 lbs.; Hardtop, 1825 lbs.

NOTE: All dimensions in inches unless otherwise stated

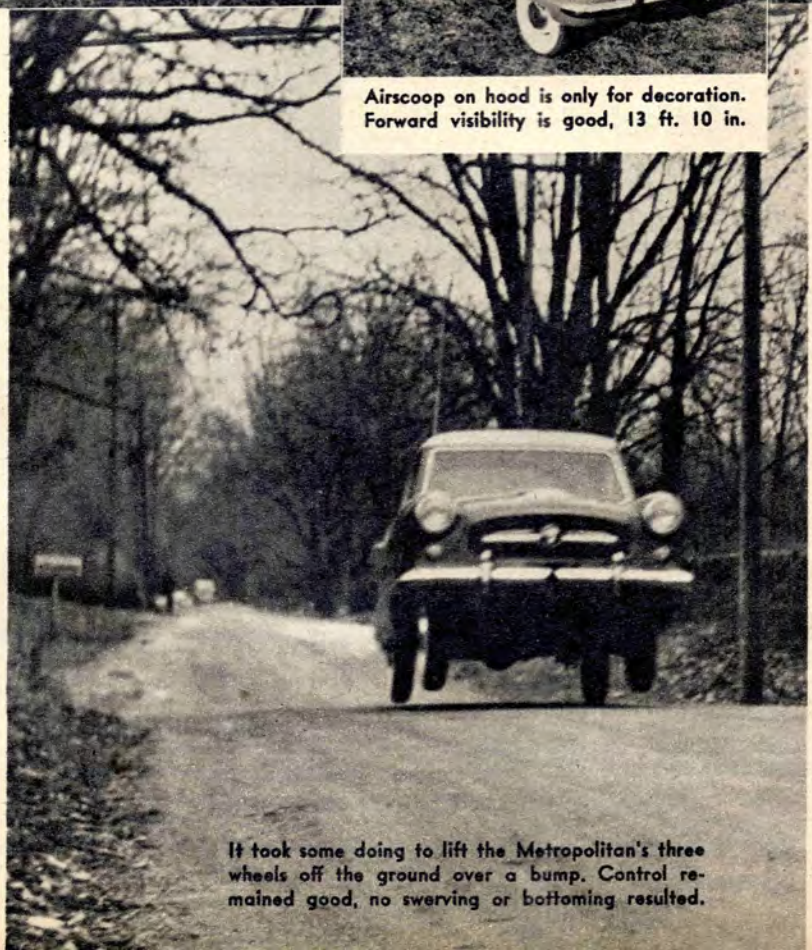
ENGINE SPECIFICATIONS

Cylinders, valve set-up[1]	4, in-line, overhead, pushrods
Bore and stroke	2 37/64 x 3 1/2 in.
Displacement	73.17 cu. in. (1200 c.c.)
Compression ratio	7.2 to 1
Power output (max.)	42 brake hp @ 4,500 rpm
Carburetor	One Zenith downdraft
Fuel pump	AC mechanical with hand primer
Transmission[2]	Manual, column shift, 3-speed with synchromesh on 2nd and 3rd
Clutch	Single disc, dry plate by Borg-Beck
Rear axle	Hypoid gears with ratio of 4.625:1
Engine piston speed @ max. rpm	2,625 ft./min.
Electrical system[3]	12-Volt

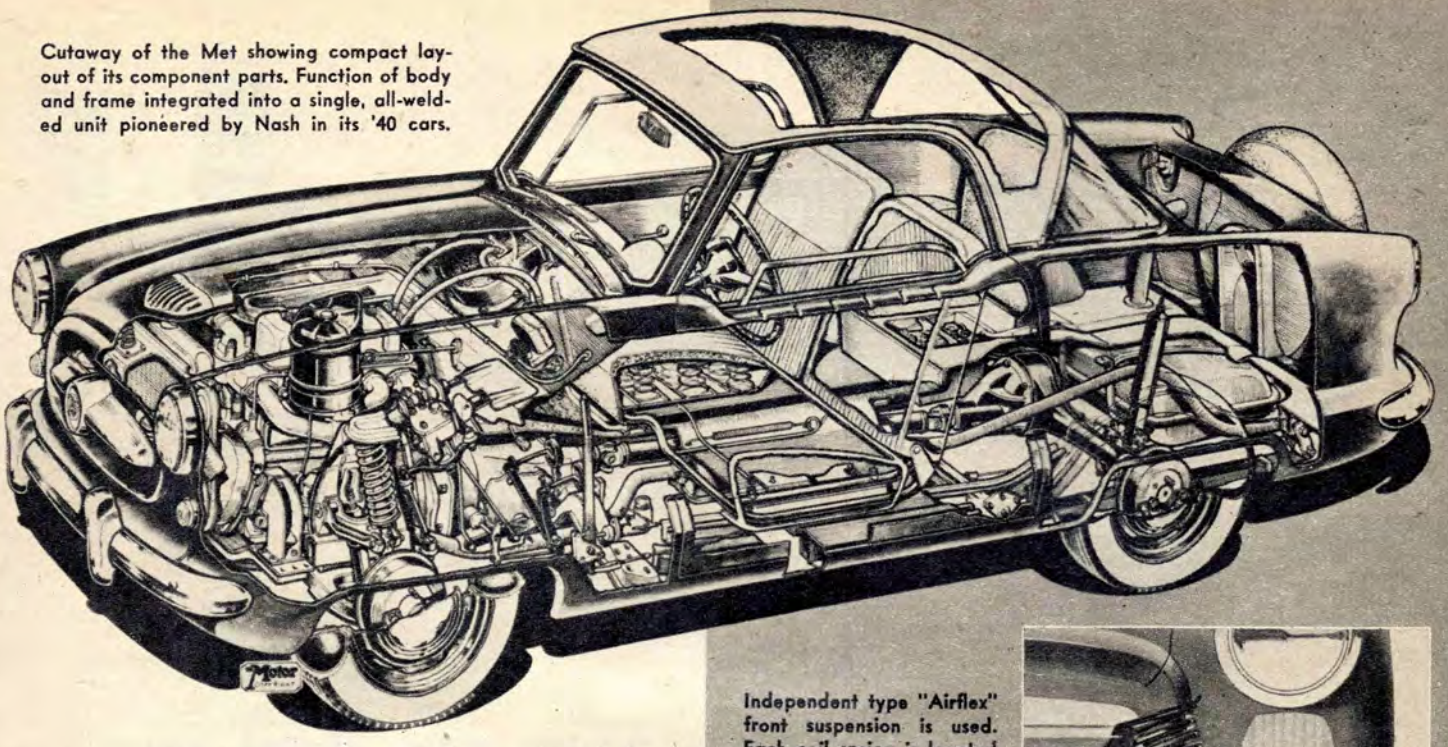
[1]The Metropolitan's engine is a standard Austin A40 unit slightly modified by Nash Motors; principal change is the addition of one piston ring, making a total of four per piston.

[2]The transmission is as specified by Nash and is modified from the usual Austin 4-speed unit.

[3]Electrical components are the familiar Lucas units.



It took some doing to lift the Metropolitan's three wheels off the ground over a bump. Control remained good, no swerving or bottoming resulted.



Cutaway of the Met showing compact lay-out of its component parts. Function of body and frame integrated into a single, all-welded unit pioneered by Nash in its '40 cars.

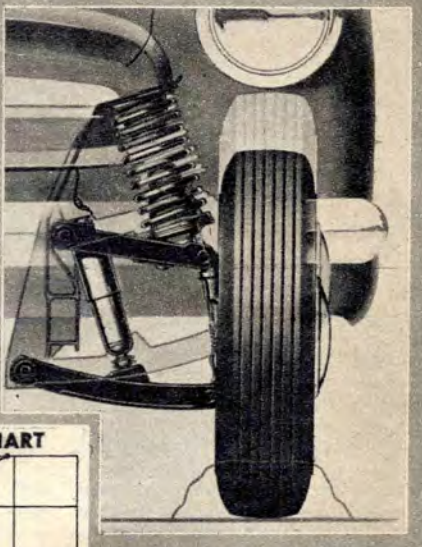
For those who want a peppy little car for town or country—Nash has it

■ The marriage between Nash and Austin of England is so far a happy one: completely engineered in Detroit, this car is being built on a special assembly line in the Austin works. *Bonderized* throughout, the body will make it tough for rust and corrosion to gain a foothold.

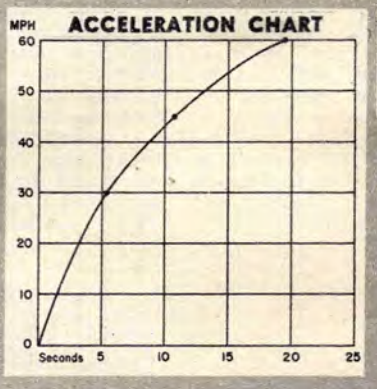
The Metropolitan should be considered as a two-passenger car—the rear seat is for kiddies, small ones only. But if one is careful to abide by the manufacturer's suggested tire pressures (24 lbs. front, 22 lbs. rear), this baby will hold the road as if geared to it and take the flattest corners with ease when the big, heavy cars scream their tires and pant for breath.

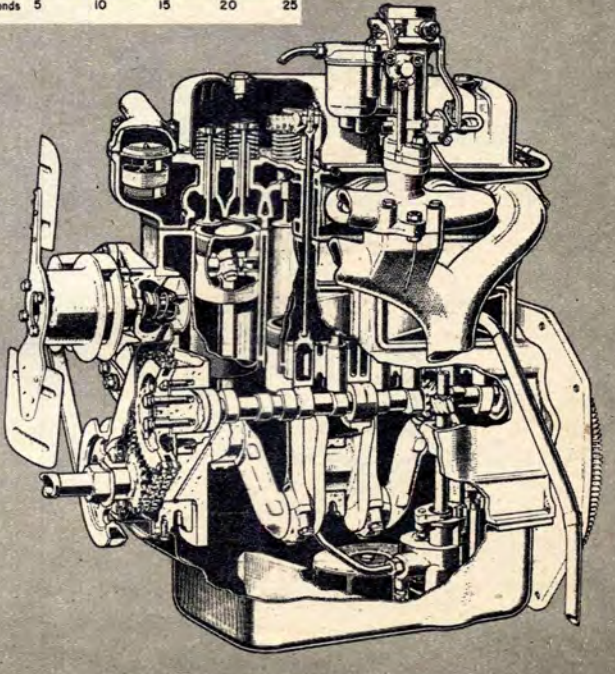
The workmanship on our two test cars, and on others we have examined in showrooms, is very good, and tall fellows over six feet will find they have ample room. Probably the best thing about the "Metro" is that it does not feel like a tiny car but has a solid feel and sound. Naturally the short wheelbase is a bit choppy riding on roads with extremely bad bumps and chuckholes, but then a big car won't ride like an ocean liner under the same circumstances.

This is a good buy and a sturdy, dependable mount for the economy minded; it's not cheap in appearance, and has real dig at green lights. Prices at ports-of-entry are $1445 for the Hardtop and $1469 for the Convertible; Weather-Eye heater adds $69, the very good radio is $60, and whitewall tires cost another 18 bucks. It'll run rings around anything in its class.

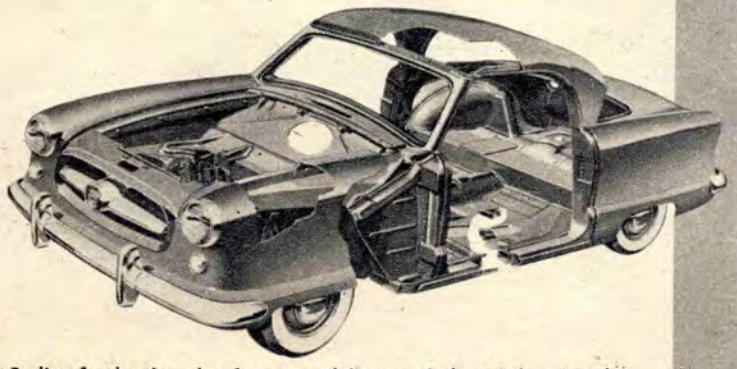


Independent type "Airflex" front suspension is used. Each coil spring is located between the upper control arm and spring seat in wheelhouse panel. This permits spring to act along the line of compressive force, reducing unsprung weight and adding to handling characteristics. Direct-action shock absorbers are used.

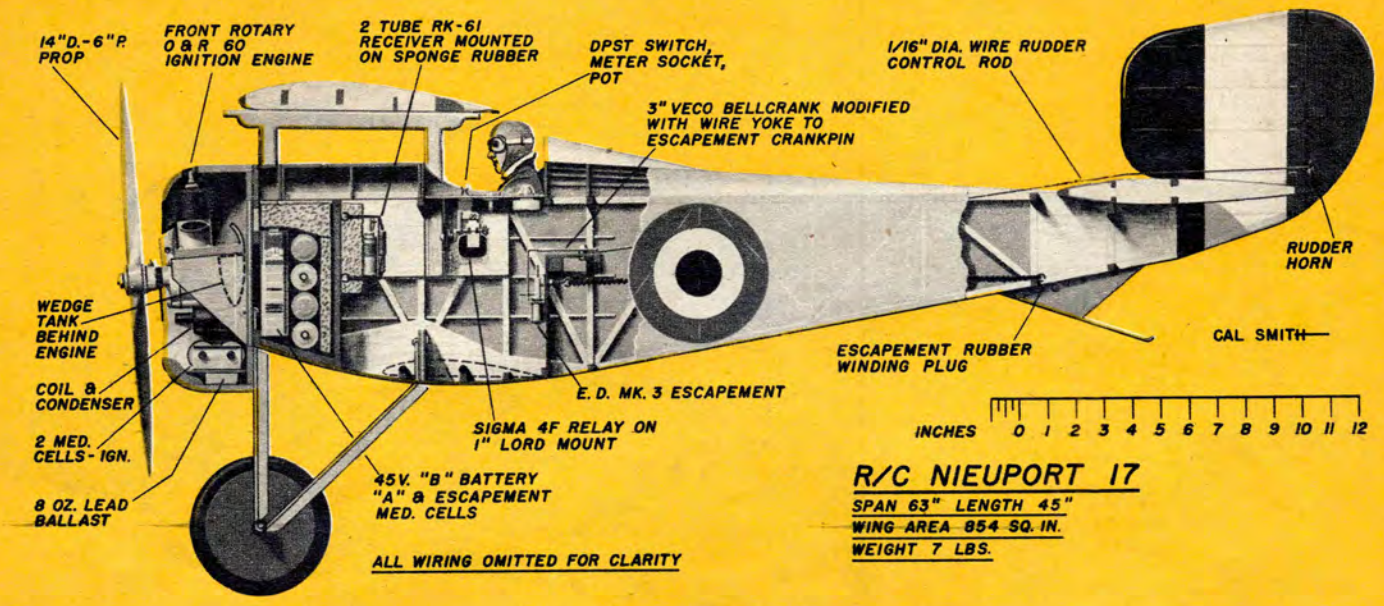




Cutaway view of the Austin A-40 engine which powers the Nash Metropolitan. Of rugged construction, it has proven trouble free and economical for many years. The monobloc type cylinder head is of cast iron.



Bodies for hard and soft top models are of the Nash unitized Airflyte construction. Parts of underbody, floor and frame unit are interchangeable. Welded structure gives exceptional rigidity.


14"D.-6"P. PROP
FRONT ROTARY O&R 60 IGNITION ENGINE
2 TUBE RK-61 RECEIVER MOUNTED ON SPONGE RUBBER
DPST SWITCH, METER SOCKET, POT
3" VECO BELLCRANK MODIFIED WITH WIRE YOKE TO ESCAPEMENT CRANKPIN
1/16" DIA. WIRE RUDDER CONTROL ROD
RUDDER HORN
WEDGE TANK BEHIND ENGINE
COIL & CONDENSER
2 MED. CELLS - IGN.
8 OZ. LEAD BALLAST
45V. "B" BATTERY "A" & ESCAPEMENT MED. CELLS
SIGMA 4F RELAY ON 1" LORD MOUNT
E. D. MK. 3 ESCAPEMENT
ESCAPEMENT RUBBER WINDING PLUG
CAL SMITH
INCHES 0 1 2 3 4 5 6 7 8 9 10 11 12
ALL WIRING OMITTED FOR CLARITY
R/C NIEUPORT 17
SPAN 63" LENGTH 45"
WING AREA 854 SQ. IN.
WEIGHT 7 LBS.

Giant Nieuport

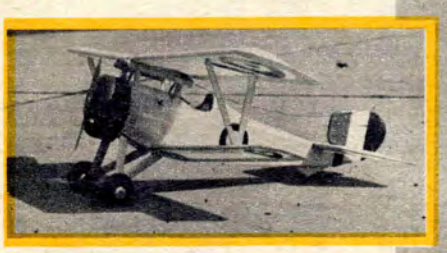
Fabulous radio-controlled biplane is realistic model of World War I fighter

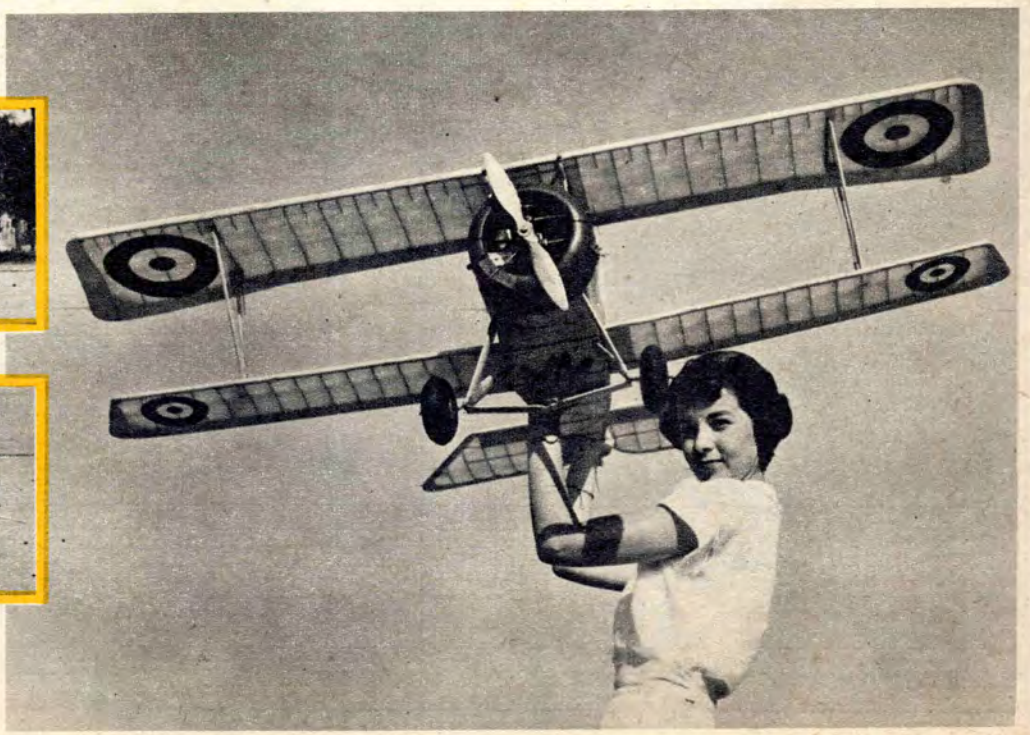
■ This radio controlled "monster" is patterned after one of the most famous and best-looking airplanes in World War I history, the French Nieuport 17. It not only flies but does not fall apart. It has been flown both free flight with engines of .29 displacement and by radio control using the larger engine. The original Model 17 was flown experimentally with rudder-only control, but there is ample room in the fuselage for multi-control systems.

One unusual feature is the use of the 227G airfoil described by Dr. Lippisch in the April 1950 A.T. issue. Due to the high lift of this section, the original design had to be revised with less incidence.

Even allowing for 80% biplane efficiency, the high lift of the wing is more than adequate to carry the 7 lbs. of weight. Early test flights were made with a Forster .30 engine, but though this would normally be enough power in a more conventional model, the built-in head wind of the 8-inch cowl permitted very little prop blast efficiency. Next the O&R .60 ignition was installed, partly because a larger prop could be used and because nose weight was needed. With about one-third to one-half throttle the .60 pulls the ship along nicely and the low rpm sound suits the model exactly.

Like most scale models of World War I aircraft, this one suffered from a bad case of tail heaviness. So every effort was made to keep the heavy objects well forward. Ignition coil, condenser and batteries are all in the cowling. Radio batteries are located immediately behind the firewall. To add to the scale effect and gain more nose ballast, 5" dia. wheels were borrowed from an old baby stroller. This type of wheel has small tires and conical hubs giving good scale appearance. Their weight with ¼" axle was exactly one pound. These were substituted for the large airwheels used originally. Even with so much weight concentrated forward it was still necessary to add some lead inside the cowling to



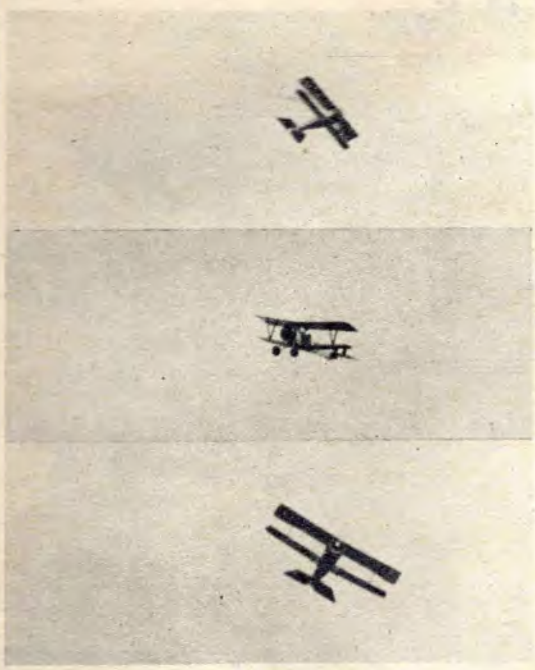


move C.G. far enough forward for good trim. A thinner flat-bottomed airfoil generating less lift would probably reduce the amount of nose ballast needed.

The axle was shock-mounted on the gear legs by binding with rubber bands, in same manner as on real aircraft.

Due to short nose moment and large prop, fairly large thrust offsets were used. Downthrust worked out to 5 deg. and right thrust is also 5 deg.

Receiver installation follows standard practice, being laid flat against a bulkhead on a sponge-rubber pad. It is held in place with rubber bands passing over receiver and pad from hooks attached to the bulkhead. Antenna runs down inside fuselage bottom back to tailskid. The relay is separated from the receiver and mounted on a 1" Lord mount against a bulkhead in front of cockpit. Access to batteries, receiver and rear of Lord mount is through a removable hatch between the cabane struts on fuselage top. DPST switch, meter socket and potentiometer are mounted on a strip of plywood along side of cockpit. E.D. escapement is mounted on plywood bulkhead at rear of cockpit. Rudder control rod is actuated from a 3" Veco bellcrank fitted with a wire yoke at one end that engages the escapement crankpin.

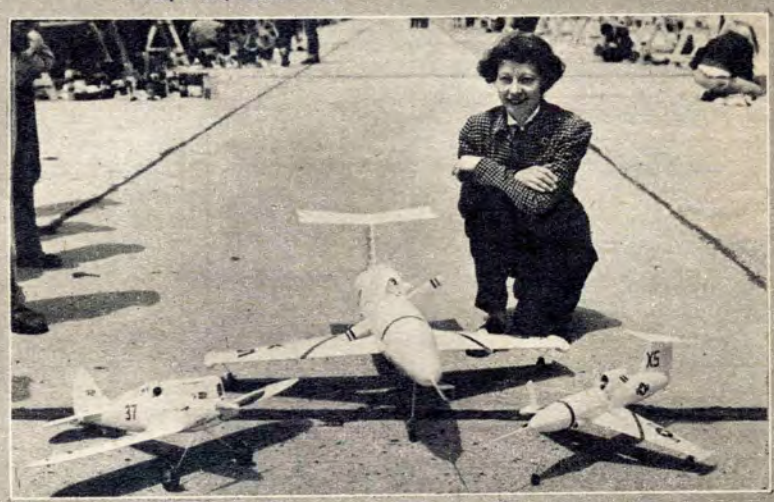


Model construction follows standard practice, the fuselage consisting of all ¼" square strip, longerons, uprights, cross members and diagonals. Wings are multi-spar with false ribs between full chord ribs. Tails are lightweight construction utilizing symmetrical airfoils, over-under spars and planking on leading edge. Nylon covering is used throughout, greatly increasing strength. Top wing is one piece and is held on cabane struts with rubber bands. Cabanes are built up of ¼" dowel edged with rockhard ¼" x ½".

Flying this model is a real production and although the actual span is only a little over five feet, the chunky fuselage gives the ship a massive appearance. There is always some small boy hanging around who tries to climb in the cockpit and go for a hop. Spectators' mouths hang open and modelers shake their heads when you start dragging all the pieces out of the car. Then there is the lengthy pre-flight, what with hooking all the wings and struts together with rubber bands.

Mirror Meet Brings Out Unusual Entries; Endurance Record Set Under PAA-Load Rules

Bigness is a mark of the N. Y. Mirror's Model Flying Fair. To prove it: Chuck Foster's entry in the beauty scale contest: 63" Pitts Special, 9 lb., 4 oz., Atwood .60.



Florence Christie with a trio of her all-white models, all beautifully finished. Howard Pete has De Long 30, small Rocket Racer has K&B 15, big version has Hassad Blue Streak.

First national record holder in PAA U-control endurance is Chris Schuck, of NYC. His winning time was 1 hr., 33 min. With 1 qt. of fuel, Torpedo .29 plane weighed 7 lbs. at take-off.

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(THINNER 35c)

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$1.25

PINT CAN
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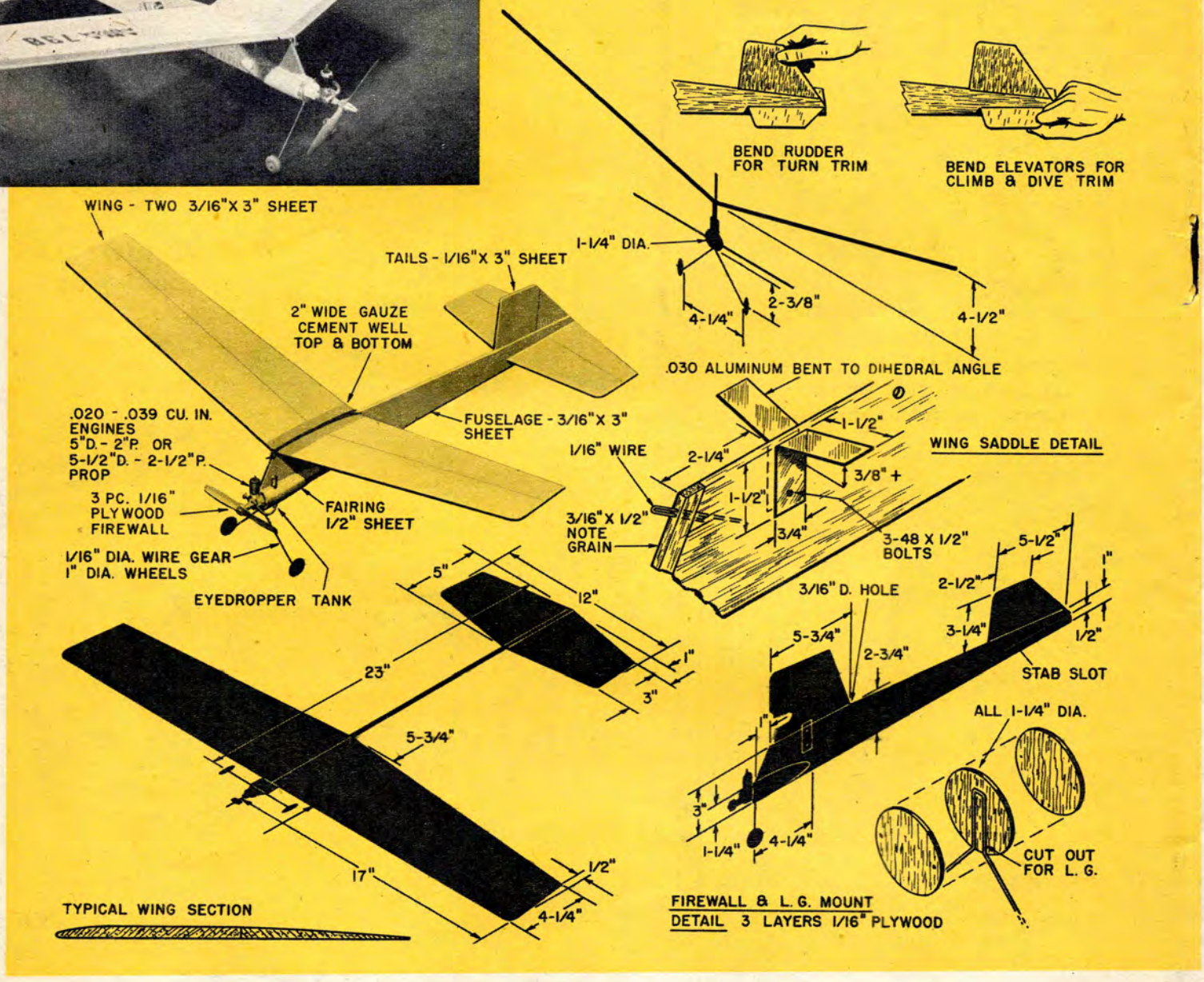
BALSA FREE FLIGHT TRAINER



"Old Indestructible"

■ Although this model was never intended to win contests, several constructed to these proportions have disappeared on out-of-sight flights. There is nothing limited about the performance of a well-designed and carefully constructed all-balsawood free flight plane model such as this one.

Most important feature of an all-balsa club trainer for the novice flyer is that it is easily repaired. So if you don't get your plane adjusted quite properly and it does cartwheel in on a wingtip—no matter, a little glue, a minimum of time and patience and you'll be airborne again. Repairs are not quite so rapid with a paper-covered job, and the work is more exacting.

Add a short piece of ⅛" square balsa under the leading edge of wing to obtain incidence. Bend up wing saddle so wing rests firmly. Model should balance 25% back from leading edge. If tail-heavy, add lead weight to back of crankcase. Test glide; add more incidence if necessary until crisp, clean glide results. Fly under reduced power with limited amount of fuel, letting model lift out of your hand into the wind. Trim for proper flight pattern by warping rudder and elevators. The original test models flew best in right climb and right glide.

AMERICAN BOY $1.00
SPAN: 18" For .020 to .074 Eng.
Our U-Control trainer . . . the biggest dollar's worth of model airplane in the world. It's a sleek profile job, 100% complete—100% prefabbed.

MONOCOUPE 90A $1.50
SPAN: 18" For .035 to .074 Eng.
Scale model of America's favorite private plane. Prefabbed kit includes carved balsa fuselage, formed metal cowling, U-Control, etc.

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. . . with these action-packed Scientific model thrillers.

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FREE! Scientific Catalog . . . Contains all our exciting action models: Airplanes, Speedboats, Race Cars, etc.

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WINGSPAN: 16" FOR .020 TO .074 ENGINES

Betty Skelton's championship stunt flyer . . . never before at this low, low price. It's highly colorful — a terrific performer. Prefabbed kit contains carved balsa fuselage, colorful decals, etc. _____ **2.50**

LITTLE BUCKEYE

Our brand-new speedboat sensation! This sleek beauty powers with any "1/2A" engine, electric motor or Jetex. Prefabbed kit includes 12" carved balsa hull, brass metal fittings, etc. _____ **1.95**

NO. AMER. AT6 $1.95
SPAN: 18" For .035 to .074 Eng.
Our extremely popular scale model of the AT6 Trainer. Prefabbed kit features carved balsa fuselage, etc.

BOEING P-26A $2.95
SPAN: 18" For .020 to .074 Eng.
An excellent control-line flyer. Prefabricated kit is complete in every detail . . . all parts finished.

RIVIERA $3.50
For "1/2 A" Eng., Electric Motors
Authentic Chris-Craft replica with a 12" carved balsa hull and brass metal fittings. All parts finished. Completely prefabbed model.

SEA HAWK $2.50
"1/2 A" Eng., CO_2, or Elec. Motors
Features our exclusive aeronautical fin and rudder design. Prefabbed model has a 12" carved balsa hull, brass metal fittings, etc.

BUCKEYE JR. $3.95
LENGTH: 14" For .020 to .074 Eng.
Full speed ahead for thrills with this "beaut" of a speedboat. Prefabbed model is 100% complete—carved balsa hull, brass fittings.

CURTISS HAWK $2.95
SPAN: 17 1/2" For .020 to .074 Eng.
Deluxe U-Control model of the U.S. Army's famous "Hawk" fighter. 100% complete . . . 100% prefabbed. Contains carved balsa fuselage, etc., etc.

LITTLE MERCURY $1.50
SPAN: 18" For .039 to .074 Eng.
Carved fuselage model — at this sensational low price. It's completely prefabbed . . . easy to assemble, easy to fly. Jim Walker's U-Control.

BOEING F4B-4 $2.95
SPAN: 17 1/2" For .020 to .074 Eng.
Deluxe U-Control model. 100% complete—100% prefabbed . . . with carved balsa fuselage, metal cowl, rubber wheels, pilot, etc.

WACO CABIN $1.50
For .020 to .049 Engines
Imagine! This carved fuselage biplane "beauty" for only $1.50. It's semi-scale. Features Jim Walker's U-Control, all prefabricated parts.

LITTLE MUSTANG $1.95
SPAN: 18" For .020 to .074 Engines
Famous escort fighter model. Completely prefabbed. Features carved balsa fuselage, formed balsa wing, etc., etc.

LITTLE DEVIL $1.50
SPAN: 18" For .020 to .074 Eng.
An economically priced U-Control model. Easy to build and fun to fly. Prefabbed parts include: carved balsa fuselage & wing, etc.

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HANDY REEL *including handle* — Handy Reel conveniently stores the lines . . . connected to the handle and ready for thrilling flight! Because of its large diameter there is no possibility of kinking the lines. Reeling in and out is smooth and flawless! Made of durable Styrene plastic, with metal reinforcements. **$2.95**

HANDLE *without reel* — You'll get the full "feel" of your plane and maneuver with thrilling new sensitivity and control with the Handy Reel Handle! Delicate control line adjustment can be made at the forward edge of the handle. The handle grip is shaped to the contour of the hand to give you the full comfort and delicate awareness of every motion of your plane. Ruggedly constructed of high impact Styrene, with metal reinforcement at critical points, Handy Reel Handle withstands tremendous pulls and punishment. **.75**

HANDY THONG — Safety accessory . . . adjustable; locks handle to wrist, avoids loss of ship or injury to spectators: Required by AMA for contest flying. **.75**

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'Round the Track

News, views and comments from the miniature car fans, here and abroad

■ Inasmuch as this Column is being written before the first of our revived model car columns (in the July issue) is distributed, we do not have as much car news as we hope to publish in the next issue. But stick with us—there will be more and more, if you readers send it in, as you should. We are especially interested in getting sketches of tricks, gadgets, attachments, etc., that relate to model race cars; send 'em to us in pencil form, we'll do the final job here.

Sorry to learn that we gave the name of the wrong individual as Secretary of the AMRCA in the last issue. The present Sec. is Carl W. Noward, 1384 Berdan Ave., Toledo, Ohio. Carl has sent us several good pix of race car doings, one of which is printed here. He also answered our plea for news of the racing boys by including the latest issue of the AMRCA Bulletin, which he edits, and from which we glean a few notes. Here are a few top placers in some of the early races. Belleville, Ill., April 25—won by Karl Franz at 146.57 mph (new track record). Second was Charles Flint with 141.95, and Walter Wilson Sr. right behind that with 141.50. The New Orleans Annual Spring Race on April 25 showed these winners: Custom—Lt. L. Macaluso at 128.57 with a Rebel car and Dooling engine; Spur—Fran Brennan at 114.38 with Borden car and Dooling engine. Canton, Ohio, May 2 Races showed these results: Custom—B. Bissman, 145.16, 1234 car; Custom Sportsman—J. Oliver, 134.73, 1234 car (new World Record); Class A—R. Abraham, 119.04, Challanger car; Class BB, G. Richards, 113.49 with Invader; Class B—R. Abraham, 98.25, P-3 car. Fox Speedway Races at Bethlehem, Pa.: Custom Proto—W. S. Moore, 144.92; Manuf. Proto—S. Heckler, 127.11.

We generally think of model car operators as a rather grease-stained bunch, much the same as their glow engine-driven boat and plane compatriots; you know—oil stained coveralls, or pants and shirt. So we got a kick out of a story told us by a New York friend, who was travelling through Detroit. He put through a phone call to Glen Fairabend, Detroit speed merchant, asking if there was any chance of seeing some cars in action. Glen said sure, and a time was set to meet at the local race track. Came the appointed hour, and Glen rolled up in a spotless Cadillac —no model cars to be seen. He stepped out, equally spotless himself, and looking in fact, like the well-dressed man-about-town.

Our friend was sadly disappointed—looked to him like no racing *that* day. But Glen stepped to the rear of the car,

The man with the "know how," Joe Ilg of Laureldale, Pa., has set more World and track records with miniature racing cars than any other fan in America. Joe was "shot" here at Canton, Ohio, after his Fox car had taken first and set a new track mark of 141 miles per hour

opened the trunk to reveal a whole brace of beautiful cars, each in its own niche. He picked out one, fueled it, walked out to the track, and soon had it humming around in fine shape. This was repeated with the other cars, and when the session was over and with all cars again stashed away, not a spot of oil or dirt could be found on Glen or the Caddy. A very impressive demonstration, our friend thought!

Miles Wilson (819 E. 41st. Ave., Spokane 36, Wash.) says there was tremendous activity in race cars in his area about two years ago. The city built a cement track complete with fencing, bleachers for spectators, etc. Miles says that the race car boys told him the sport just got too expensive for them, so this fine setup is just gathering dust and weeds now.

We find that there is no lack of racing activity around the country, but it appears that most of it is being done by a group who have been at it for years. In other words, there are not many newcomers, which is why you see so little race car equipment on the shelves of the hobby shops. The oldtimers have most of what they need, or can make it themselves, and there is little call for cars and equipment from others. We have been told by several followers of the game that not enough effort has been made to interest the newcomers, which would mean holding events at the meets for low cost cars—preferably with stock low cost engines. It's true that the oldtimers would have little interest in such events, but wouldn't they welcome an enthusiastic bunch of new racers, who would tend to gravitate to the "higher grades" of cars, as they picked up enthusiasm and know-how? Do we have the wrong angle? Let us know how we can help model car racing, you hotshots.

Perhaps some of our readers would like to know a little about racing in other countries. Take England, for example. There is plenty of activity there, and a good National Meet was held by the Model Car Association last fall. Speeds were not up to those made in this country, but the variety of cars was really surprising. Top speed was 124.3 mph, made by C. Catchpole in the 10 cc class, which corresponds to our 60's; car used a Dooling engine. There were several American cars in this group, among them Dooling Arrows and Specials. Smaller Doolings appeared in the 5 cc group, but were nosed out at 94.14 mph by J. R. Parker using an ETA engine. These boys go all out in the smaller sizes, and the 2.5 cc class was topped by K. Proctor, with 79.29 mph made by an Oliver-engined Special. In the real small category —1 cc—F. S. Drayson made a single run at 68.49, to top the field. Some really fantastic streamliners are made by these boys, especially in the smaller classes where hopped-up standard engines can be found in large numbers.

They also go in for real scale models—and we mean *exact* scale! Needless to say, many copy the popular sports cars and racers, such as MG's, Jag's and so on. Scale and semi-scale cars in the small sizes are also used in what the English modelers call "Circuit-Racing," which is simply a deluxe miniature form of rail racing. Since these little cars are intended for real work, they do not have *all* the scale features of the prototypes, but there is never any doubt as to what the builder had in mind when he constructed his racer.

The circuit-racers run on a course that simulates the large road-racing events, and are expected to follow S-turns, and go up and down hills; there are miniature pits where they are serviced. Some of these tracks are of the portable type, being made of plywood or composition-board, which can be taken apart for transportation or storage; such tracks as these are always a (*Continued on page* 82)

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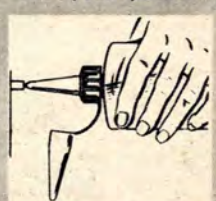

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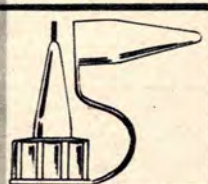

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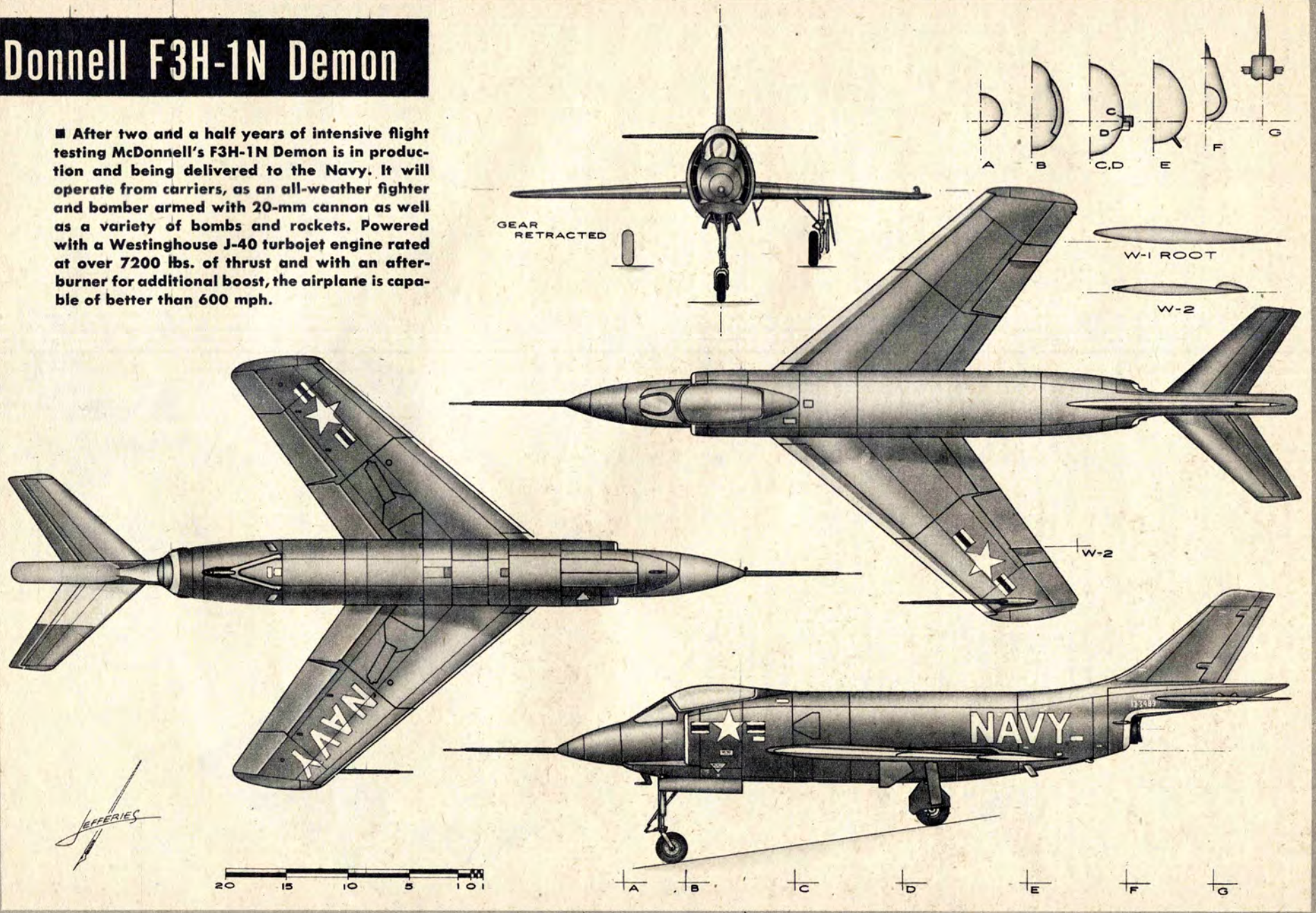
McDonnell F3H-1N Demon

■ **After two and a half years of intensive flight testing McDonnell's F3H-1N Demon is in production and being delivered to the Navy. It will operate from carriers, as an all-weather fighter and bomber armed with 20-mm cannon as well as a variety of bombs and rockets. Powered with a Westinghouse J-40 turbojet engine rated at over 7200 lbs. of thrust and with an afterburner for additional boost, the airplane is capable of better than 600 mph.**



You Ask . . . we answer

Aero Draftsmen . . . I enjoyed the article "There are dollars in Drafting." When I am out of school I would like to continue in that field so I would like to know if there are many openings in the field of aircraft drafting. If so, what experience is required?

Bob Cutter, Grand Junction, Colo.

• According to present indications, employment opportunity as a draftsman in the aeronautical industry should continue to be good for qualified men for some time to come. We suggest you write to the Aircraft Industries Association of America, Inc., 610 Shoreham Building, Washington 5, D. C. They may be able to answer some specific questions you have in mind. Also, write to the International Federation of Technical Engineers, Architects and Draftsmen's Unions, A.F. of L., 900 F. St., Washington, D. C.

Jobs in Drafting . . . I am interested in drafting and would certainly appreciate it if you would send me some information where these jobs are available.

Tom Dyer, Norman, Okla.

• Draftsmen are employed in the construction, machinery, iron and steel, automobile, aircraft and shipbuilding industries, by private engineering and architectural consulting firms; and in Federal, state and local government agencies.

In addition to getting your training at a trade or vocational school and the like, it is also possible to serve an apprenticeship with certain firms where you receive on-the-job training, and at the same time take part-time schooling. For the addresses of employers who hire apprentices, write to the United States Employment Service office in the locality where you wish to train.

French "Bebe" . . . Recently I have heard much of a French lightplane sold in kit form. The plane is a low wing monoplane and is powered by a 26 horsepower "Volkswagen" air-cooled motor. I believe that it is called a Jodel D-9 "Bebe." I would appreciate it greatly if you could direct me to a source of information about the airplane.

Edwin R. More, Cambridge, Mass.

• The Jodel "Bébé" is manufactured by Société des Avions Jodel, Route de Seurre, Beoune (Côte d'Or), France.

Piper Skycycle . . . Enclosed is a picture of the Piper Skycycle. I was curious to know what happened to this plane. It wasn't in production when this was taken in 1946. Was it ever put in production? It was to sell for $900 to $1000 then. Fuselage construction is of plastic and aluminum monocoque, windshield and canopy a single unit of molded Plexiglas. Wooden prop, Lycoming 55 hp engine, 20 ft. wingspan. How fast did it go and what was its range?

Arthur F. Goeller, Jr., Verona, N. J.

• The Piper Skycycle was never in production, the project having been abandoned.

Mailplanes . . . I have a hobby of watching planes with my binoculars, and I have seen the mailplanes go over frequently but I do not know whether they are Beechcraft C-45 Expediters or JRB Voyagers. As I have 3-view pictures of the Voyager and not of the C-45, I thought you could tell me where I may obtain 3-view pictures of the C-45.

D. Kimpton, Cobourg, Can.

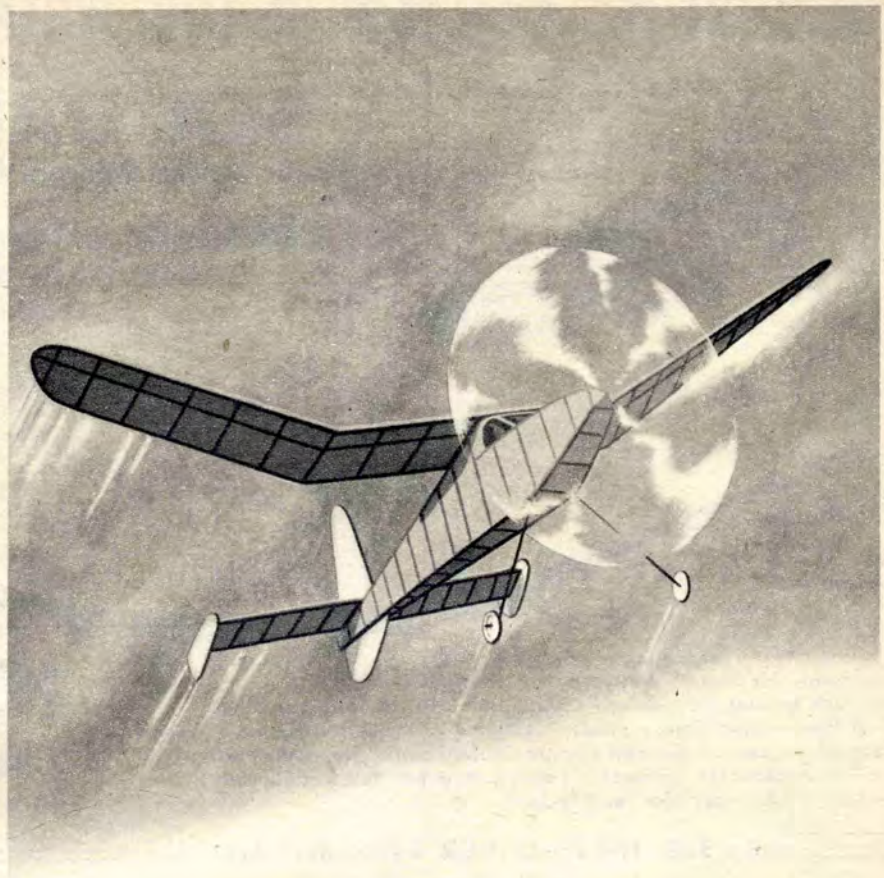
• The C-45 Expediter and the JRB Voyager are the same airplane, with the exception of the markings.

The C-45 has AAF markings and the JRB Navy markings.

Brewster Buffalo . . . I was born during WW II, and I became very interested in airplanes. About two years ago I read about the Brewster Buffalo F2A-1. In my books I read that it was very maneuverable and could climb very good. Right away the little job became my favorite. What stumped me was, could it outmaneuver the Jap Zeke? And why was it put out of production?

Philip Notestine, Nixon, N. J.

• The Brewster F2A-1 Buffalo was not a particularly good fighter. Already going out of service when the war started, it was replaced by the Grumman F4F Wildcat which was its superior both in speed and maneuverability.



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Plastic 3-Point Outboard Hydroplane

Actual photograph of model built from kit.

A Speed Demon in Action! Designed especially for the new gas outboard engines!*

You'll get the thrill of your life when you send the SEA DART racing through the water!

Designed along latest hydrodynamic principles to insure top performance and stability, this 16" all-plastic model includes such special features as—Completely finished hull (including bridle mount) of high-impact Styron plastic, designed to thrive on the most rugged use! Die-cut Styron engine mount and cockpit fairing parts! Authentic racing-type decals! Can be assembled in minutes . . . operated either tethered or free! Your dealer has the SEA DART—ask him for it today!

$3.95

Length 16"
Kit B-12 Beam 6½"

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PLANES	Kit	Price
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Polish Fighter	C-5	5.95
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Yak-9	S-3	2.95
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POWER BOATS	Kit	Price
Richardson 27' Cruiser	B-1	$5.95
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Century Sea Maid '20'	B-5	2.95
Chris-Craft 32' Cruiser	B-6M	9.95
Deluxe 34-pc. scale marine fitting set for Kit B-6M	B-6F	3.50
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Deluxe 35-pc. scale marine fitting set for Kit B-8M	B-8F	3.95
Higgins 26' Express Cruiser	B-9	3.95
Harco '40' Deluxe Cabin Cruiser	B-10M	10.95
Deluxe 64-pc. scale marine fitting set for Kit B-10M	B-10F	4.50
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MARINE DRIVES	Price
½ A (⅛" dia.) Gas Marine Drive	$2.95
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BC (¼" dia.) Gas Marine Drive	3.95
Electric Marine Drive	2.25

Marine Fittings Also Available *Individually*. Ask Your Dealer.

Under Control

(*Continued from page* 16)

meetings are held every two weeks at houses of various members, with short business sessions followed by demonstrations of radio theory, etc. The "Harris Hobby Shop R/Cers" fly in north central New Jersey, their flying field being at Flanders; they are affiliated with the Musconetcong Aero-Nuts, and may be contacted at Harris Hobby Shop (3 S. Essex St., Dover, N. J.). So far they have no bylaws or formalities.

Another Garden State R/C group, which has been operating very informally for several years, has decided to put themselves on a somewhat more business-like basis. This is the North Jersey R/C Club (Secretary is Leo Cunniff, 90 Day St., Clifton, N. J.), and meetings are held every three weeks. New members are welcomed.

Dale Root (6036 Telegraph Ave., Oakland, Calif.) of the East Bay R/C Club says that radio flying has grown so fast field operations have become a problem; newcomers were a bit backward about shouting for air time, so the old-timers overdid it. Now they have instituted a check system. All flyers sign up when they are ready to get into the air, flying is done according to the list, each having a 4-minute time limit to tune up and get airborne. This way everyone gets a chance. On flyaways, they have an understanding as to who is to try and bring the plane back; the man needing help calls for the strongest transmitter—only that man turns his rig on. Otherwise with everyone pushing a button, no one knows *who* has the ship.

Dale notes that Bob Forbes has a Mac II which really reaches out downwind to snag wandering planes. The Turlock meet was interesting; Dale says everyone was watching his "Little Freak" fly after having seen it in the A. T. Model Annual—so he proceeded to take it off, right between the legs of a chair! (A new wing was built in three days.) E.B.R.C. meets first and third Tuesday nights each month at Dale's hobby shop (above address), from there they move to Bushrod Recreation Center.

The Aerial Robots hail from Central California and fly regularly at Patterson, on a private airport. They also have an abandoned airstrip at Balico, with 5000 feet of paved open runway about 500 feet wide. (Sounds like heaven from where we sit on the crowded East Coast.)

A Second Annual R/C Get-together will be held in the vicinity of Langley Field, Va. on the Labor Day weekend; this event will feature informal flying (a few contest events if the boys want them) demonstrations, technical talks, movies and just *plain* talk. Will be run over the three days, Sept. 4, 5 and 6, to give everyone a chance to travel and fly as they want. Flyers are asked to bring their families along, as there are plenty of sightseeing attractions in the area; field facilities will be provided for men, women and children. Further info may be had from John Worth (Box 9, Hampton, Va.)

Camilo J. Quelquezen (Box 182, Lafayette College, Easton, Pa.) wants to contact R/C flyers in the vicinity. He is especially interested in selective A.F. tone multi-channel equipment.

Word has reached us that Geoffrey D. Pike (10½ Watcombe Circus, Sherwood, Nottingham, England) has made what he hopes will be recognized by F.A.I. as a record-breaking R/C Endurance flight. He kept his plane in the air for one hour, 32 min., 49 sec., and at that, it landed with a third of a tank of fuel left; the engine run was about 90 min. Geoff, who is the designer of the Fenners-Pike actuator and pulser, flew an original design plane of 7' span and 700 sq. in. area. Loaded weight was only 3 lbs., and the plane carried 8¼ oz. of fuel. We don't know what sort of radio equipment was used, but the engine was an Amco .87 cc.

A Circus of *Stunts* in the Air!

RING MASTER, JR.

Actual photograph of model built from kit.

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Kit S-5 Span 30" Length 21½" For engines from .09 to .19

$1.95

This is it! The Jr. model of the famous Sterling Ring Master . . . created by Matt Kania, world-renowned model designer. The RING MASTER, JR. will do every stunt in the book—and then some! Built of quality balsa wood with such special features as—Shaped and notched leading and trailing edges. Die-cut ribs and tail surfaces! Die-cut plywood parts! Die-cut fuselage! Decals! Formed wire landing gear! Hardwood motor mounts! EASY-TO-READ, STEP-BY-STEP PLANS AND INSTRUCTIONS! See your dealer now—start stunting with the RING MASTER, JR.—easy to build, and a snap to fly!

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diesel; since it was apparent that much more time could be had, an attempt at a 2 hour flight will probably be made soon.

More news on the big Great Lakes R/C Meet, to be held by the R/C Club of Detroit. Final date has been set as Aug. 21 and 22, and there will be two classes—an Open Class for anyone who wants to enter (no age limit) and a Novice Class, for those who have never flown in R/C competition before. No one can enter both classes. Jack Lemon (26939 Greenfield, Royal Oak, Mich.) says his club feels it might be the world's largest—they had 44 members as of March. We know of some larger ones, but we'll let these latter boys answer this challenge themselves! Jack also says that we did not print quite the entire story, when we mentioned here in the March '54 issue that members of his group were using the 3E5 tube in Citizen-Ship 27¼ receivers, to reduce filament drain. He was the first to try this, found it necessary to lower the quench frequency, by increasing the inductance of the quench transformer; he gets a current change of 1.7 to .3 ma. with the 3E5.

We note in "Model Aviation," the AMA monthly news sheet, that R/C has been ruled O.K. by the Contest Board for use in F/F gas contest events, but only for cutting the engine—*not for steering*. Seems R/C might also be used for operating a dethermalizer, but this wasn't mentioned.

Technical Notes. The old vibration problem is always with us, but John Dixon (13444 W. McNichols Rd., Detroit 35, Mich.) has a new angle that is worth looking into. He reasons that the effect of engine torque reacts on the fuselage in exactly the opposite direction to prop rotation; since there is a torque kick corresponding to each power pulse from the engine—and there are 200 per second at 10,000 rpm—John claims that no relay should be mounted with its armature shaft parallel to the engine shaft, that is, fore and aft of the fuselage. Moral is, *always* mount the relay so that the armature shaft is at right angles to the engine crankshaft. He has checked the relays in his own and other planes and found his theory holds water. This idea is worth trying out—any comments pro or con?

Paul Johnson (1500 Arthur Ave., Des Moines 16, Iowa) has been making some checks with the Babcock BCR-3 receiver, and has found that it works fine as a carrier-style unit, rather than operating with audio tone, as the makers intended.

(*Continued on page* 66)

What's in the Name . . . Hamilton Air Force Base?

(San Rafael, Calif.)

Named for Lloyd Andrew Hamilton, born in Troy, N. Y. A student at Harvard University in 1917, he enlisted in the Army upon declaration of war with Germany. Expressing a desire for aviation training, Hamilton was assigned to M.I.T. for ground work. By September of that year he was in England completing flight and gunnery training. In March 1918 he reported as a First Lieutenant to the famed British 3rd Aero Squadron. Lt. Hamilton was the first American officer to fly with the Royal Flying Corps, and the first of 150 pilots in his squadron to shoot down an enemy aircraft. In June, recall orders came to command 17th Aero Squadron. In August, he was shot down and killed while attacking an enemy observation balloon ten miles behind the lines.

New! WORLD'S LARGEST GAS MODEL BOMBER B-25

67" Span. Length 49". "U" Control, Radio Control, or Free Flight

This 1" scale model can't be told from the real North American B-25 Bomber. Features of the construction set are 3" scale rubber tired alum. disc wheels, 4¼" alum. cowls, planked type balsa fuselage, ready cut tail and rudder balsa, alum. guns, all parts, and full size drawing. For easy handling of this model, the outer wing panels are removable, reducing the wing span to 30". Two OK 14 or 23" type motors can be used. Const. set, postpaid..... **$20.00**

9' TAYLOR CRAFT GAS MODEL

9 foot span. Can use Radio control. Set has 36 ready cut wing ribs, cut plywood body formers, 16" carved prop, tail wheel unit, 2 full size plans, printed balsa, silkspan, etc. Uses "C" type motor, single, twin, or 4 cyl. motor. Set without motor or wheels, postpaid..... **$17.50**
Extra pair of 4½" airwheels, $3.00

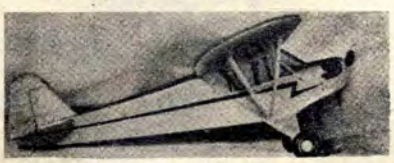
Grumman-F3F1

32" span. 1" scale. Const. set. Rubber driven... **$4.00**

Curtiss F11C4

32" span. 1" scale. Const. set. Rubber driven.. **$4.50**

NEW PIPER CUB GAS ½ A



26" Span. Uses .035 to .049 gas motor. Set has printed body sides. Very strong and very light; scale rubber Veco wheels and prop. A real beauty in its class.
Const. set..... **$2.00**

BOEING PT17 GAS

45" Span. Can use 5 cyl. M5 motor to scale or B or C type motor. U control. Set has scale rubber wheels and all spec. parts, ready cut wing ribs, tail wheel unit and wheel. Const. set.. **$9.95**

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Mail your old engine to us, no matter what make, size or condition, even though some parts are missing! We will allow you $5.00 for it in trade towards a brand new FORSTER front rotary valve engine! Your old engine and only $6.20, plus 35c for postage and handling, will bring you the latest and best model F-29 or F-31 FORSTER engine, made by the oldest established model engine manufacturer in the U.S.A. and known the world over for outstanding precision, performance and fuel economy.

This is a limited offer, good at the factory only! Mail your old engine today. The new engine of your choice will be on its way to you promptly. Write us for free descriptive literature.

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WHERE QUALITY COMES FIRST

The Readers Write

Let's hear from you! Address all letters to Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

Flash from Harold deBolt . . . Just saw the article ["Over and Under," describing his R/C model of same name in July issue]. You sure did a good job, but I noticed a serious mistake in the drawings which somehow should be corrected. Stabilizer is shown at 3° positive incidence. It should be 3° negative on this ship. Model as shown would head for China on the first launch!

Harold deBolt, Williamsville, N. Y.

My Friend, Mr. Rigby . . . Saw some advance proofs on your last issue, delighted to note that you recognized the amazing capabilities of my friend Wallis Rigby. But in three separate places you spelled his first name wrong. It isn't spelled "Wallace," it's "Wallis."

Frederick Samson, New York City

• Appreciate the correction, Mr. Samson. Officially and properly, it's Wallis Rigby, author and designer of "Rigby's Book of Model Ships," "Rigby's Flying Models of Jets, Rockets and Space Ships," etc.

From the Manufacturer . . . Just saw the June issue of "Air Trails Hobbies" portraying our new "Air Tractor" on the cover. This is a very excellent artist's presentation of the prototype airplane. For your information, the production airplane now building in Yakima is incorporating certain minor changes. It might be well to mention that the open tail configuration is optional, depending on the requirements of the operator.

R. T. Lamson, Lamson Aircraft Company, Seattle, Wash.

Salute from a Midshipman . . . I have just finished reading your 1953-54 issue of "Air Progress" and found it an excellent magazine. Most enjoyable were the articles on air racing and the little known aircraft of the Air Force. The genealogy series by Douglas Rolfe was very interesting and the accompanying sketches were extremely helpful. I would like to see more of the work of Rolfe in your next issue. My present occupation is that of Midshipman, class of 1955, at the United States Naval Academy. My position regarding aviation is being in charge of aviation matters for the Midshipmen's professional magazine, "Trident."

Wayne O. Mattson, Midshipman, U.S.N., Annapolis, Md.

Also called "Friendly" Smith . . . Of all the modelers who have published their models in A.T., my favorites are Walt Musciano and Cal Smith. A regular mystery has evolved around Mr. Smith, though. On different articles he has called himself Stinson Smith, S. Calhoun Smith, Calhoun Smith and lately, Cal Smith. Am I right in assuming these are all one person? In one article, about a .49 powered Hughes Racer, the text is signed "Stinson Smith," and the plans "Calhoun Smith." Wha' Happen?

Dave Kingman, Merrick, N. Y.

• Cal, Calhoun and S. Calhoun are all one Smith; Stinson is another—no relation.

Did Whitehead Fly Prior to Wrights? . . . As I collect all historical documents and information about history of aviation I asked the U. S. Embassy in Rio about the possible information source in the States. They advised me to get in contact with your department to get your kind information about following: I got information from Germany that American Gustav Whitehead (or Weisskopf) made his first flights about 2 years before Brothers Wright in the U.S.A.

Please let me know, if you know something about it and if my information is right.

Wilhelm Johann Steiner, Rio de Janeiro, Brazil

• Your query brings up a very interesting question: was Gustav Whitehead the first man to fly an internal combustion powered airplane? According to his claim he was. Of course partially successful flights had already been made prior to 1901, by Clement Ader of France, but in steam-powered aircraft.

Gustave Whitehead was an inventor, residing in the city of Bridgeport, Connecticut. According to his claim he built a monoplane powered by a kerosene motor

developing 40 hp, of his own design. This engine had 5 cylinders and was of compression ignition type, peak rpm was 800. The monoplane for which the claim of first flight was made was not Whitehead's first aircraft. He called it Number 22. His previous planes were powered by acetylene gas motors. The span was 36 ft., length 32 ft. It is interesting to note that the airplane was of steel tubing construction covered with cloth. Thrust was obtained by two propellers of 6' diameter each, which produced 508 lbs. thrust.

Whitehead claimed that on January 17, 1902, he made two flights with his airplane, one covering two miles over Long Island Sound in a straight line, landing in the water, from which he was retrieved by his mechanic and brought back ashore, and the second of 7 miles distance including a 180 degree turn and return to starting place. As the long flight by Whitehead was not witnessed by officials, untimed and unmeasured, and the only testimony was by his mechanic, there was considerable scepticism as to the truth of the statement. Whitehead gave up his experiments soon after his successful flights, the airplane was abandoned and rusted away, though there is no doubt of its existence as several photographs of it have been published.

Stamps for Hospitals . . . This is to acknowledge and thank you for your gift of stamps to this hospital.

Your donation will help to fill many long hours of hospitalization with pleasant diversion for our patients. On behalf of the veterans who will benefit by your generosity, we deeply appreciate this evidence of your concern for their welfare.

Norman D. Lavoie, Chief, Special Services Divn., VA Hospital, Brooklyn, N. Y.

• All unusual stamps on incoming correspondence are sent to hospitalized fans.

Three-Quarter Views . . . Could you please tell me what are three-quarter front and three-quarter rear positions of a plane and car? If possible please show me sketches.

Donald Ray Lyons, Saint Jo. Tex.

• Glad to obilge, Don. These sketches will tell you the story.

Shortage in Vienna . . . Just saw the plans in your May issue for the Corvette by Jefferies.

They are the best I have seen on a model car. Your magazine is most welcome here in Vienna as hobby information is quite scarce.

Capt. W. D. Baum, American Embassy, Vienna, Austria.

• More are "in the works," Captain.

From a Friend . . . I want to take this opportunity to thank you folks for your swell magazine. I really look forward to it every month and I build from many of your plans, besides getting very good information from your articles. I like it!

Alan Campbell, Independence, Kans.

Plans Please . . . No need for praise of your magazine because, by now, enough fellows have said how great it is, and they are so right.

What I am primarily interested in are your plans. While most of the fellows in our club (Lawrence-Air Istocrats) build from kits, I can turn out a better model and in a shorter time, using your plans. They are really the "cat's meow."

K. S. Carlson, Andover, Mass.

NEW EXACT TO THE SMALLEST DETAIL FAMOUS PIRATE SHIP

BLACK FALCON

AURORA MODELS ARE FUN TO ASSEMBLE!

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Veco PRODUCTS proudly presents . . .

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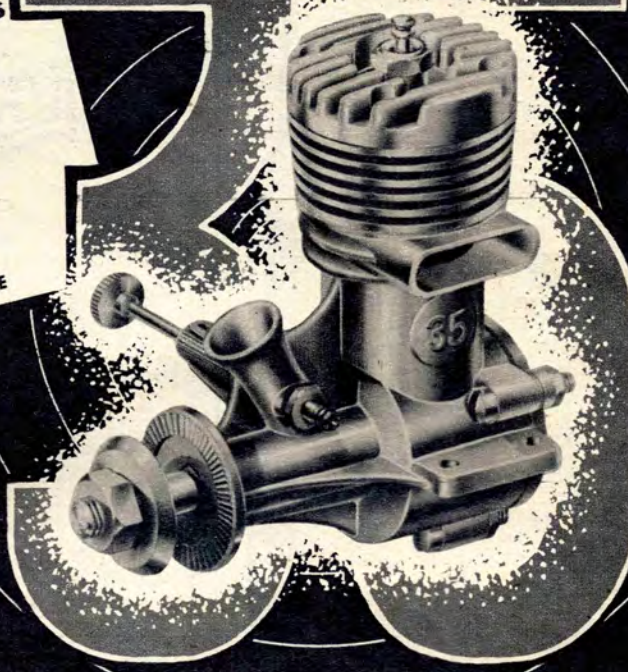
The New '1954 Veco' .35

The ONLY engine that has

TCC*

* TEMPERATURE CONTROLLED CLEARANCE



★ YOU ASKED FOR IT ★

The Great Increase in the demand for the 1954 Veco .29 and .31 has prompted the pre-release of Veco .35 also with 'TCC'. It has been TRIED . . . TESTED . . . PROVEN under the personal direction of Mel Andeson . . . well known through the years for the "Cyclones" and many "Spitfire" engines.

HENRY ENGINEERING COMPANY

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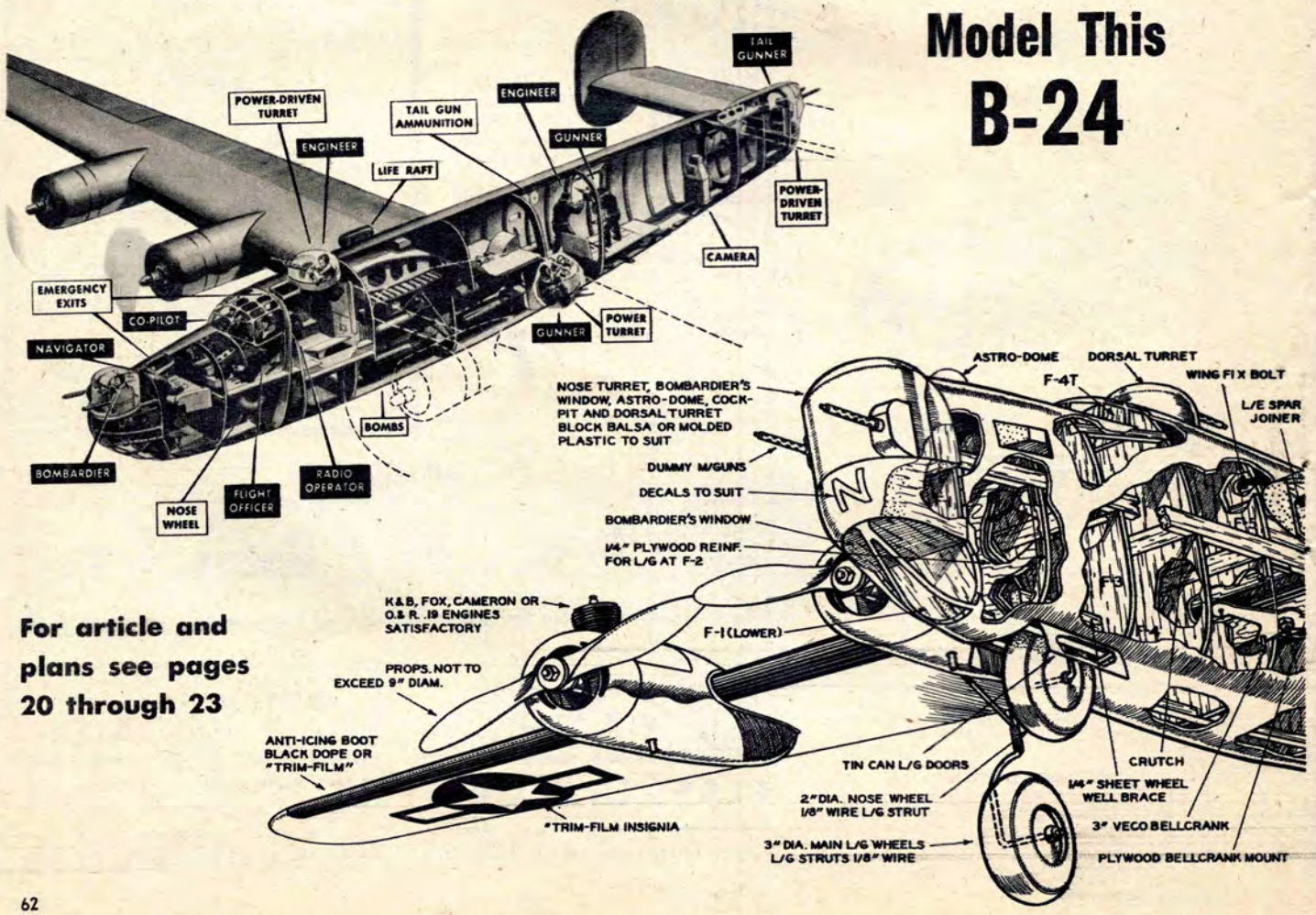
NOTE: See Bob Palmer Fly the New 'Veco' THUNDERFIRD, Powered with the New 'Veco' .35 Engine, at the 1954 Nationals.

Model This B-24



For article and plans see pages 20 through 23

Springfield Models

964 SPRINGHAVEN ROAD — SPRINGFIELD, PENNA.

Coming Soon!

TWO NEW ½A FREE FLIGHT

1. Grumman Amphibian
2. Great Lakes Twin Float Seaplane

TWO *NAT RAMBO* DESIGNED R/C PLANES

1. Spirit of St. Louis
2. Cessna "Bird Dog"

These babies fly in spite of themselves — like bumble bees that aren't supposed to either by all the laws of aerodynamics. But there's no law against believing your own eyes. Try these newest Springfield Models... fly 'em . . . they'll make model aviation history. Terrific results no matter how fast you slap 'em together!

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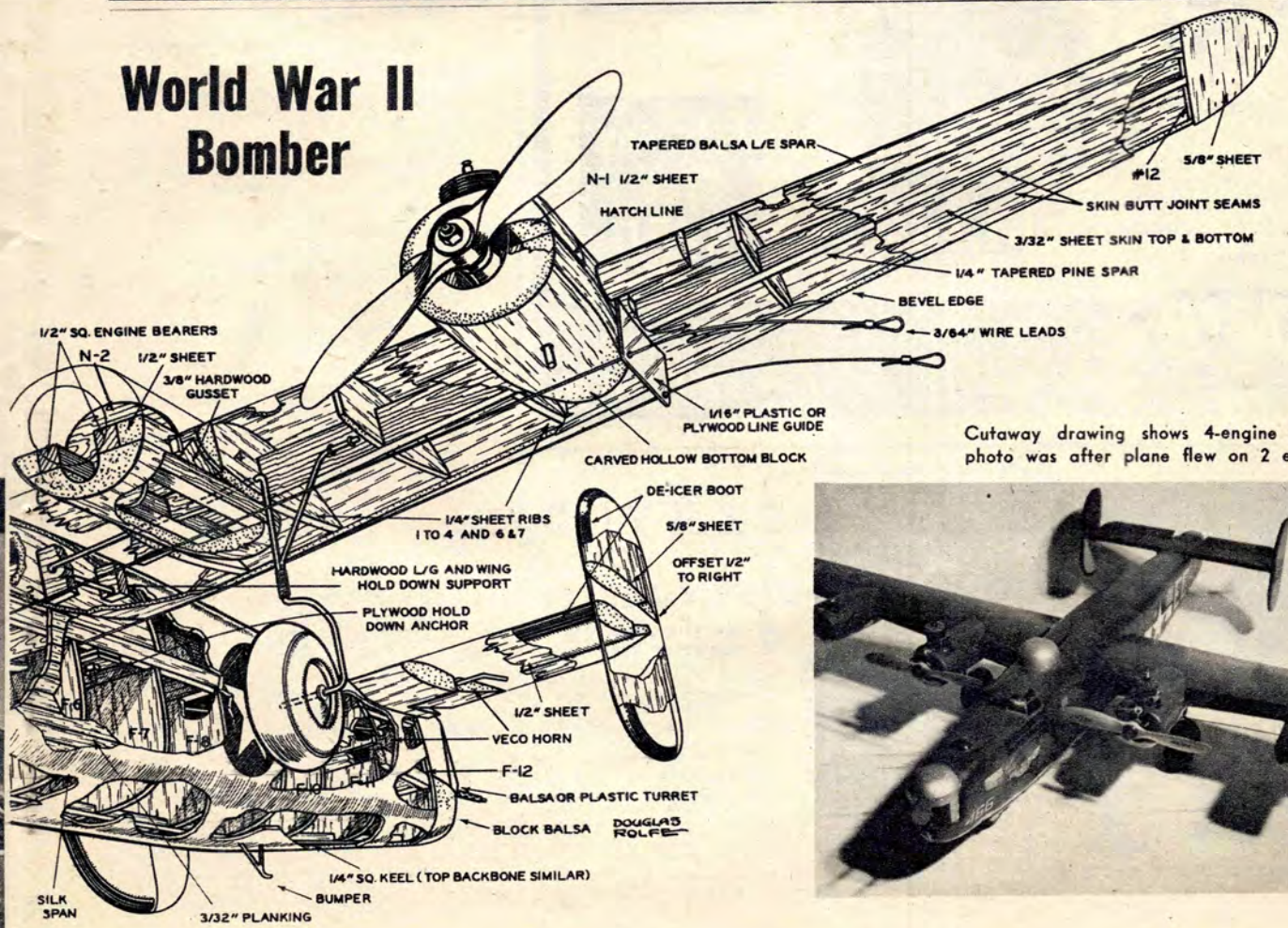
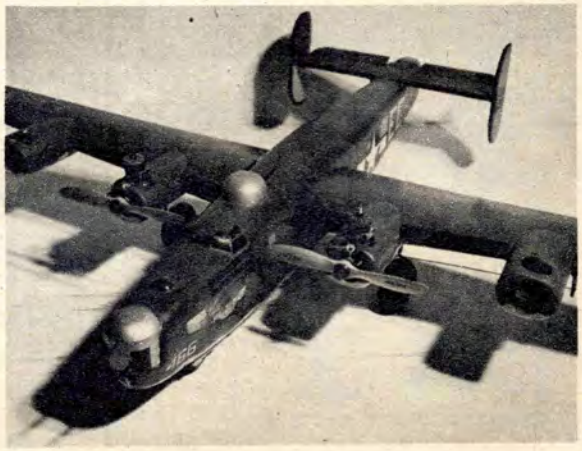


Cutaway drawing shows 4-engine set-up; photo was after plane flew on 2 engines.



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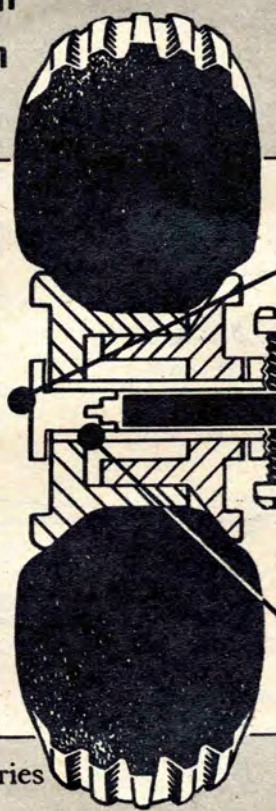

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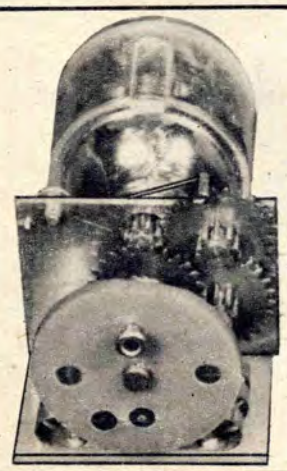

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FOR BEGINNER OR EXPERT!

Using your simple single channel radio *without* changes you can have your choice of single or *multiple* controls, *selective* to your command. Install one in *your* model now and use *less* batteries at a lighter weight! There are no *linkage* or *rubber band* problems, those worries are *gone* forever with ½lb. torque, motor driven "Multi-Servos"

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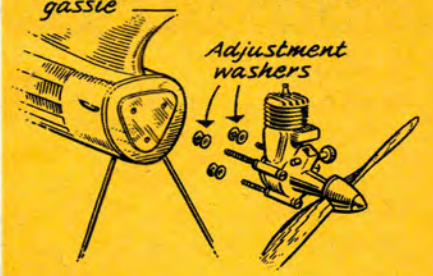
Earl Cayton, Salem, Ore., employs dural firewall plate as firm base for thrust adjustment washers in radially-mounted engine of freeflight gassie



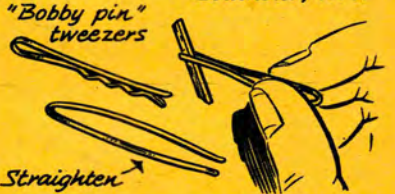
Sketch-book

Have you developed something new in construction, control or flying? Send a rough sketch—we'll redraw it and pay $5 for each accepted. Contributions should be original ideas; sorry, we cannot enter into any correspondence on submissions.

Cut & reshape

Safety pin clamp by Arthur Lederle, Southold, N. Y.

"Bobby pin" tweezers

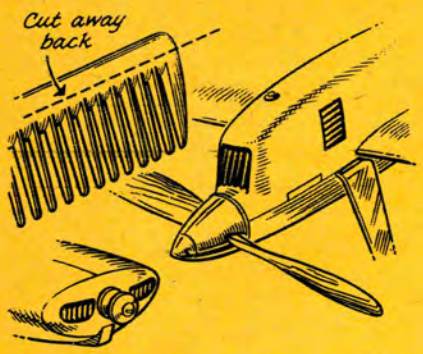


Straighten

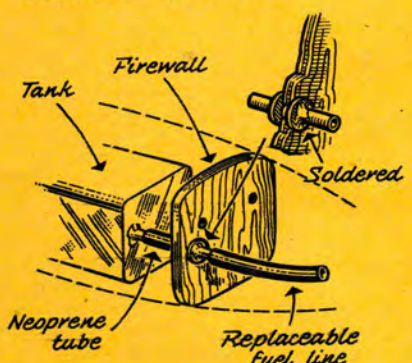
...by Hugh Horton, Henderson, Colo.

Inexpensive model "tools" for easier handling of small model parts —

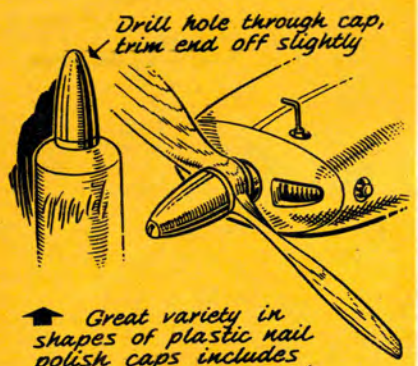
Fabric covering is easily applied with paste adhesive. Spread over frame with fingertip, it allows 15 min. period for stretching covering before setting. By Eric Knox, San Francisco, Calif.



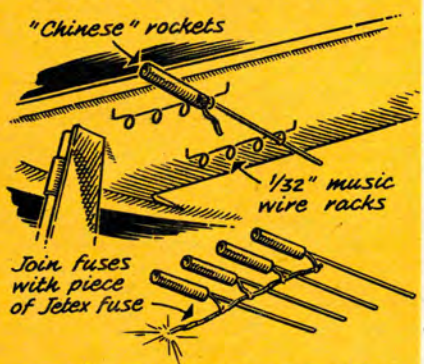
Sections cut from combs make realistic grills for cowl openings. Ideal for team racers, stunt & scale models of all sizes says Phil Boretto, Santa Rosa, Calif.



L. M. Waldorf, Binghamton, N. Y., makes small coupling at firewall to facilitate replacing fuel line to "sealed-in" tank.



Great variety in shapes of plastic nail polish caps includes some suitable for A/2 engine spinners suggests Keith Reed, 12, Union City, Mich.



Richard Chang, Hong Kong, China, rigs realistic rocket batteries under wing of control-line model —

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BOILER: Strongly constructed, fitted with base, whistle, safety valve, and filler cap; two burner lamp, and funnel supplied with unit.

Oil reservoir fitted in steam pipe line. Total weight of steam plant 1 pound.

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(*Continued from page* 59)

Paul just reduces the C battery to 4½ V., and cuts the B battery to 45 V. The receiver then idles at 3.5-4 ma., plate current dropping nearly to zero with signal. He uses three bias cells for the C battery, and mounts them right inside the receiver. Advantages claimed for this sort of operation are that most any transmitter may be used—for example, a Mac II—and there is not so much trouble with bonding metal parts in the plane. We hear from other sources that Paul has a scale Monocoupe R/C ship flying—quite a departure from the usual very functional contest designs he normally builds.

Paul Runge (Box 301, Higginsville, Mo.) has been very busy figuring out circuits that enable a second tube to be added to the Mini-Mac or Simple-Single. One of his schemes utilizes a 3A5, with both sections working, while another has the standard M-M with a tube such as the 1AG4 or MPC-1 in the second position. Both versions utilize second tube as a DC amplifier, and both require two separate B batteries; in the case of the M-M receiver, though, each battery can be a single 22½ V. unit. Advantages of the circuit are that idling current is low, running around .7 ma. with most of the receivers; on-signal plate current of the second tube goes from zero up to 2.5-3 ma. depending upon the tube, relay and battery voltage. Standard S-S and M-M receivers may be converted with little trouble. Paul also suggests adding a candle to your R/C work kit—for getting the enamel insulation off fine wire. After heating wire briefly in flame, enamel can be scraped off with finger nail. On wire finer than #34, keep it moving through the flame, or wire will melt.

Bill Butler (8856 Earhart Ave., Los Angeles 45, Calif.) has been using a Citizen-Ship 27 mc. transmitter on the ham 10 meter band, by simply putting in the correct crystal and retuning. He found a 28.1 mc. frequency was not quite far enough from 27¼, as he got occasional interference, so thinks that he will have to go to the other end of the 10 meter band—around 29.7 mc.—to be safe. Such operation is only legal for hams, of course, Bill being a real old-timer, W6JX. He rightly feels that hams should keep off the regular R/C spots, not only for their own good, but to give the boys who do not have ham licenses as much chance to fly as possible.

Harold deBolt sends some hints on use of his Multi-Servos, gleaned after much flying with them. He finds four pencells *in parallel* give very long life—he has had over 125 flights with a single set of four. It is suggested that servo be installed to give right turn with a single pulse; most planes tend to turn left, so single right pulse enables easy correction. When landing, use a right-turn pattern, pulsing the rudder as needed to make a 90 or 180 degree turn into the final approach—a little practice gives proper pulse rate and very smooth turn.

Commercial Items. Couple more new R/C books are out, one of them being intended strictly for newcomers, and entitled "The Beginner's Radio Control Manual," by R. S. Haney. Costs $1.15 postpaid, from Scientific Hobbies Co. (Box 7334, Chicago 80, Ill.) Paper-covered and with 82 pages, book starts with elementary theory, goes on to construction of single tube 3A4 transmitter and gas-tube receiver. Escapement operation also covered.

The other book is an English publication that should be of interest to most every R/C enthusiast. Titled "Radio Control for Model Ships, Boats and Air-

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craft," book is by F. C. Judd, and is sold in USA by Gilfer Enterprises (Box 239, Grand Central Station N.Y. 17 N.Y.) for $1.60 in paper cover. Has 140 pages, 135 illustrations, offers dozens of receiver and transmitter circuits, actuating equipment, wavemeters. This one is for the reader who can find his way around a circuit diagram, but is not a "deep" volume by any means.

New OK Cub .19 engine should be of interest to R/C flyers, especially those who need a bit more power than the .14-.15 class can produce. Produced by Herkimer Tool & Model Works (Herkimer, N.Y.) engine weighs only 2⅞ oz., and all mounting dimensions are same as for Cub .14. Porting and needle valve are designed to give greater fuel draw, and prop flange is extended type, which moves prop farther from needle valve. See your local dealer for this light but potent engine.

Relay used in Babcock R/C receivers, and made by Babcock Radio Engineering *Inc.* (7942 Woodley Ave., Van Nuys, Calif.) may be purchased separately for $9.00. Comes in sealed case 1⅝" L x ¾" dia. and fits 7-pin tube socket. Weighs 1¼ oz. and is set at factory to operate at 2 ma. and open at 1 ma. Relay has true balanced armature, full set of screw adjustments; latter are sealed, of course, cannot be reached unless case is cut open.

Electronic Specialty Supply Co. (58 Walker St., N.Y. 13, N.Y.) now prints regular bulletin describing in detail new R/C items, and listing regular stock of components, kits etc. Get on the mailing list—it's free.

Compact and beautifully-made triple reed unit may be had from Radio Con-

(*Continued on page* 69)

NOW!

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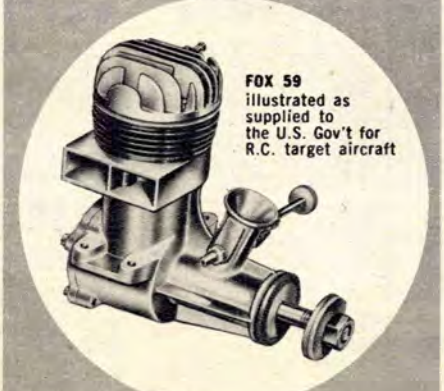
(on special order)



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You can enjoy the award winning performance of a FOX motor! For Free-Flight, Stunt and Radio-Controlled . . . there is a FOX engine for your plane. See the FOX engine of your choice at your dealers today!

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"CUSTOM MIDGET" RECEIVER TRANSMITTER and ACTUATOR..... $9.98 ☐

PLANS AVAILABLE SEPARATELY AT ONLY—50c ☐

ALSO AVAILABLE, "STANDARD MIDGET I" RADIO KIT. THIS GROUP OF 3 UNITS SIMILAR TO ABOVE, HAS BEEN REDESIGNED AND IS NOW MORE POSITIVE IN OPERATION THAN OUR PAST STANDARD KITS. GREATEST DIFFERENCE IS IN WEIGHT THAN IN KIT ABOVE. HEAVIER COMPONENTS ARE USED, RECEIVER WEIGHT SLIGHTLY OVER 4 OUNCES. 10,000 OHM SIGMA COIL EQUIPPED RELAY IS INCLUDED.

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NEW and FULLY REVISED our popular Money Saving Catalogue, lists and shows photos of parts, many as low as ⅓ to ¼ price you normally pay. Plus more details and photos of above kits..... 25c ☐

CHECK ITEMS YOU WISH TO ORDER. PRINT your name and address on separate sheet of paper with order. Send remittance in full to address below.

Latest book "RADIO CONTROL OF MODEL AIRCRAFT"..... $3.98 ☐

X F G 1.....	$3.50 ☐	0-3 Meter.....	$3.50 ☐
3-A-4.....	1.00 ☐	0-50 Meter.....	2.75 ☐
3-A-5.....	1.35 ☐	Potersen 27 M C Crystal.....	4.85 ☐
10 Ft. Aerial.....	1.00 ☐		
Key Switch.....	.50 ☐	Var. Resistor.....	.50 ☐

RADIOMODELS, BOX 36, DEPARTMENT A T BALTIMORE 6, MARYLAND

"My Favorite Model"

CLOD-HOPPER II

BY JIM B. CAHILL

■ "This is the first Wakefield model which I attempted in 1937 when the weight rule was doubled—from 4 to 8 ounces. It was one of the first to use a single strut music wire landing gear. But more important it was the first successful contest model to use a folding propeller. In the spring of 1935, I made several flights, which were not too successful, with a variable-pitch folding prop, and in the late summer of 1935 my brother Bob flew a 300 sq. in. stick model with a folding propeller in Cleveland. However, neither had the essential 'stop' mechanism, nor good hinges.

"I liked this model because 1) it caught at least one thermal in every contest it was flown in and 2) I got it back many times after I thought it was gone. It would be able to compete with many 1954 Wakefields with a 2.8 oz. motor.

"The first day it was flown it made a 13-minute flight to win 5th place on the '37 Wakefield-Moffett team. The next day it made 15 minutes on its first flight to win the 1937 Moffett International Contest. It was then lost and subjected to Detroit weather for four months before it was found and returned to me. Many parts of it had to be rebuilt after the ants and grasshoppers were cleared out, and stabilizer area reduced for a change in the rules.

"In the '38 Wakefield eliminations it made 22 minutes on its first flight for first place on the American team; fortunately it was returned so I could take it to Paris. There it was timed for 32 minutes on its first flight to win the '38 Wakefield, starting a real hassle over whether the timer used binoculars.

"By 1939 it was getting pretty well

WIN $25.00 WITH "MY FAVORITE MODEL"

Send photo of yourself & model plus details to "My Favorite Model" contest c/o Air Trails HOBBIES For Young Men.

worn out and did not keep its adjustments too well. It was finally lost for good in Akron after two circles under power on a hand-wound test flight.

"The best characteristic of this model seemed to be its ability to find the center of a thermal and tighten up its circle so that it would stay in the thermal.

"Because I had hopes of sending it overseas when building it, the wing was made in two halves and the rudder was removable for packing into a very small box.

"Laminated bulkheads were used in the fuselage, with very light 1/16" balsa used to 'plank' over the bulkheads. Wing and stabilizer both had built-up box spars. 'Clod-Hopper II' was lost out of sight on 16, 18 and 20 strand motors. As it got older and heavier I used more power. In those days, there were no dethermalizers.

"The photograph shows the little French lad who found the model after its 13-mile flight near Paris in '38."

Under Control

(*Continued from page* 67)

trol Specialties (377 W. 8th Ave., Eugene, Ore.) for $19.95. Five reed job costs $24.95. Of outstanding workmanship and design, 3-reed unit weighs 1 oz., has 10,000 ohms coil. Concern expects to market 27¼ mc. transmitter that is fitted for either A.F. or straight carrier operation.

Gyro Electronics Co. (325 Canal St., New York 13, N.Y.) have a tiny 6 V. vibrator power supply that is designed to hold the popular NT-6 storage battery. Size including battery is 6½ x 3⅝ x 1⅞". Unit will produce 135 V. at 20 ma. continuously, and slight changes allow output of 140 V. at 30 ma. Also has output of 1.5 V. at 300 ma., for battery tube filaments. Sells (brand new) for $5.95, or $7.95 with battery. Gyro has stock of NT-6 batteries that appear to have much better life than many of those which have been on surplus market; $2.45 each, less acid. New item is simple field strength meter kit, sold less meter for $1.35. Send for new free catalog.

Control Research (Box 9, Hampton, Va.) will stock the South-Western R/C Supply kit for relay-type proportional pulser. Operates on 80 ma. at 3 V.—kit costs $6.00.

Chula Vistan

(*Continued from page* 34)

water sprayed and given four coats of butyrate dope. It is a good idea to double-cover the stab bottom; because of its low position it is prone to minor tears and damage. After covering install the engine timer, wing hold-down wires and the bent pin hooks that retain the payload dummy. Cement a piece of hard 1/16"x⅛" on the centerline of the bottom of the wing. Before the cement dries, secure wing in place and check the distance from each tip to the top of the rudder—be sure they are equal.

The wire pivot bar and dethermalizer parts are formed and cemented in place. Cement liberally and use strips of Band-Aid backing (crinoline) to further rein-

(*Continued on page* 72)

SOLID SCALE MODEL KITS

F8F Bearcat
$2.75

Every little detail visible in the actual airplane, every single item that can be reproduced is given to you.

Jam-packed with metal castings (47 in the P-38 Lightning), these kits are the choice of the best model builders everywhere. See them at your dealers—and, although there is no real comparison, *compare them* with any other kit available.

PROP MODELS

FW-190 Focke Wulf	$2.75	P-47 Thunderbolt	$2.95
P-40 Warhawk	2.75	ME-109 Messerschmitt	2.75
F4U Corsair	2.75	P-38 Lightning	3.50
P-51 Mustang	2.75	British Spitfire	2.75
F6F Hellcat	2.75		

JET MODELS

F-86 Sabrejet	$2.75	F-84 Thunderjet	$2.75
F-80 Shooting Star	2.75	MIG-15	2.75
F9F Panther	2.75	F-82 Twin Mustang	3.50
F9F Cougar	2.75		

New! DUCKOYS Be first!

FEMALE MALLARD

MALE PINTAIL

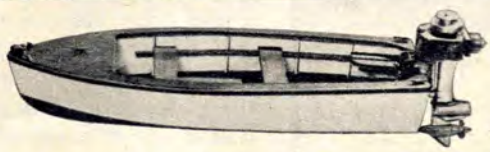
Make yourself a full size, masterpiece DECOY from these fabulous new kits. Full color instructions, completely carved hardwood heads and balsa bodies, beautiful hand-made glass eyes. Seven different ducks, both male and female . . . 14 in all.

Mallard, Blackduck, Broadbill, Pintail, Canvasback, Redhead, Goldeneye

$2.95 each

Write for the Duckoy Brochure.

OUTBOARD RUNABOUT



Be First! Get your big scale model of the 16 Foot Chris-Craft DeLuxe Outboard Runabout designed expressly for the new 1/2A outboard engines! 16 inches by 6, fully carved and shaped in a brand new way. No other scale kit has ever been so easy to put together, SO PERFECT IN OPERATION. Detail Galore . . . Chocks, cleats, bow and stern running lights, boat hook, oarlocks, fire extinguisher, working navy anchor—12 beautiful metal castings of the kind Dyna-model is famous for. ONLY $3.95.

$3.95 *(not including motor)*

See the new Super Detail model of the 18 foot outboard cruiser and Dyna's new super 1/2 inboard speed boats . . .

If no local dealer is convenient, mail orders will be filled. Please include 25¢ for packing and postage. No C.O.D.'s.

DYNA-MODEL PRODUCTS COMPANY
76 SOUTH STREET, OYSTER BAY, NEW YORK

ALL MAC 50 XMTR. PARTS AT LOWEST PRICES

GYRO FREE Radio Control Catalog

The Most Progressive & Reliable

RADIO CONTROL SUPPLIER

NEW! COMPLETE TRANSMITTER & RECEIVER Gyro DIRECTOR 4.8 Watt Transmitter & Supersensitive Receiver; wired, tested, incl. Tubes, Crystal, Cabinet, Relay, Antenna—ready to fly! **MONEYBACK GUARANTEE....$29.95**
Gyro DIRECTOR TRANSMITTER Kit, with cabinet, crystal, tube, antenna, keying switch.... 12.95
Wired & tested..... 17.95
LORENZ RECEIVER Kit, with HARD TUBE 2d stage & Sigma 10,000 ohm relay..... 9.65
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NEW! FIELD STRENGTH METER Kit, with crystal & wound coil..... 1.35
with 0-3 Ma. Meter **$3.75**; wired & tested, add 1.00

1st PRIZE, N. Y. MIRROR AIR SHOW

IMMEDIATE DELIVERY. The most POWERFUL (5 Watt) TRANSMITTER at the **LOWEST PRICE.** Famous 2 Tube MAC II circuit, featuring **GYRO MAGIC TUNING INDICATOR.** Completely wired & tested, includes 9½ ft. sectional Antenna, remote "clicker" Keying Switch, Meter, Ground plane Booster, Shorting Plug. Beautiful cabinet: 12" x 7" x 6". Available in the following models—all with money-back GUARANTEE.
MODEL X1 TRANSMITTER, as described with built-in 2 Volt Storage Battery, 2 Volt Vibrator Supply, Battery Charger. Nothing else to buy. GUARANTEED—Complete **$37.50**
MODEL X2 TRANSMITTER, as described, with built-in dynamotor for operating from 6 Volt Auto battery. GUARANTEED—Complete (less battery)..... 29.95
MODEL X3 TRANSMITTER, as described, but for dry battery operation, and using **Powerful** 1-tube, 4.8 Watt, low-drain circuit. GUARANTEED—Complete (less Batteries)..... 23.95

MINI-50 RECEIVER KIT, with 1AG4 Tube, wound choke Quench Coil, Neomatic Relay.... 11.45
Brand New 2 V. VIBRATOR TRANSFORMER, used in PE157. Output 180-135V. @ 35 Ma. 3.50
NEW! STOP WASTING MONEY on dry batteries for your transmitter. Add our **2-VOLT VIBRATOR SUPPLY** to any transmitter; output 135 to 180 V. Kit: **$6.95**.....assembled 10.95
NEW—2 Volt Battery Charger. Wired & Tested 6.95
NEW BEEP BOX. Fits in palm of hand! Rotary type works with any transmitter & self-neutralizing escapement. **NOT A KIT**..... 1.95

Low Cost PROPORTIONAL CONTROL *added to any Transmitter & Receiver. Works with any Actuator.*
COMPLETE KIT of parts & diagrams for TRANSMITTER PULSER, incl. battery & case..... 6.95
ADAMS ACTUATOR . . . not a kit..... 6.45

PE 157 SUPPLY for Mac II Transmitter..... 11.95
LORD SHOCKMOUNT..... .15
SIGMA 4F RELAYS, 5,000 ohms..... 4.95
2,000, 3,000 or 10,000 ohms..... 5.95
SIGMA 41FS, Sensitive 10,000 ohms—SPDT.... 1.45
OSR type Quench coils $1.65; for **MINI-MAC**.... 1.25
WHIP ANTENNA, 3 sections, 9½ ft..... 2.25
Antenna with base mount..... 2.75
FLEA CLIPS.....4 for 10c, DISC MAGNET for proportional control, 1 1/16" diam..... .95
R/C DIAGRAMS: 6 popular TRANSMITTERS & RECEIVERS.....ea. .25
MODEL X, MAC II, 2-tube Transmitter Unit, as used in Gyro transmitters. Only 3"x4" x 1½", wired and tested. Complete, install in your case with tubes & crystal..... 15.50
Above unit in kit form, with tubes and crystal 10.95

RADIO CONTROL RECEIVER KITS 27¼ Mc

NOTE: All GYRO kits are guaranteed complete deluxe types with diagrams—nothing else to buy!
LORENZ 2 TUBE with 2 pots. & wound choke.. 3.35
Complete with **2 Gas Tubes & SIGMA 4F Relay** 14.15
MINI-MAC with Special **QUENCH COIL & Wound Coils**..... 4.25
Complete with **CK526 Tube** and **ED RELAY**.... 11.45
MILLER or SIMPLE SINGLE with **OSR type QUENCH COIL** & wound choke..... 4.45
Complete with **Tube & SIGMA 4F Relay**; **MILLER, $9.95; SIMPLE SINGLE**..... 9.80
JOHNSON 3 Tube, with **SUB-OUNCER CHOKE**.... 4.75
Complete with **3 Tubes & SIGMA 4F 3000 Relay** 13.85
ABOVE KITS with drilled base & wound coils, add .50
ABOVE KITS wired & tested, ready to operate, add 5.00
TRANSMITTER & RECEIVER KIT—Parts and diagrams (less tubes & crystal) to build famous **MAC II Transmitter Unit** and **LORENZ RECEIVER**, with 10,000 ohm relay..... **9.95**
RELAYS: E.D. 5000 ohms **$6.50**; **NEOMATIC** 5.90
ESCAPEMENTS CITIZENSHIP 5.95
BONNER MINI..... 6.95
SUPER AEROTROL.....3.95 ED MARK III..... 5.50
BONNER COMPOUND, makes 1 channel duplicate 3 channel control..... 14.95
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Crystal holder ..... .15

SAVE 5%—Deduct 5% from any of the kit prices when ordering with any escapement.

STORAGE BATTERIES
BB54, 2 Volt, 3"x4"x5½"..... 2.75
NT6, Mini., 6 volt, 2½"x1¾"x3½"..... 2.45
CHARGER FOR DRY BTRIES. Use 1 set of A & B's all season! Recharges all 1½ to 90 Volts 6.50
VIBRATORS, 6 Volt **$1.35**; 2 Volt Synchronous 1.00
METERS: Accurate, 2" sq., 0-500 Microamp.... 5.85
0-1 Ma.....**$3.65** 0-3 Ma.....**$2.95**
0-5 Ma..... **2.75** 0-50 Ma..... **2.65**
FLEAWEIGHT HOOKUP WIRE—25 Ft. (5 colors) .25
6 VOLT DYNAMOTORS, with Shockmount base, 250 Volts/65 ma. or 180 Volt/100 ma..... 7.95
SIGMA 4F RELAY COILS: Repair relays, 2,000, 3,000 or 10,000 ohms..... 1.10
SOCKETS: mini, hearing aid, 4 or 5 pin..... .15
Mini 7 pin.....10c; Loktal or octal.....25c for 2
PLUG & SOCKET, small 3 or 4 pins.....pair .15
5 or 8 pin.....pair .25
Bakelite BOARDS for Receivers, 25c; **RF CHOKE** .20
SWITCHES: Toggle SPST.....30c; Slide switch .15
KEYING SWITCH, remote newmicro "click" type.. .55
METER JACK, open circuit..... .25
Closed circuit.....30c; PLUG for jacks..... .35
MINI PLUG & JACK, for metering, etc..... .15
RESISTORS, small—most sizes..... .10
POTENTIOMETER, mini 10,000 or 25,000..... .40
POT., dime size, 10,000-25,000 ohms..... .85
CONDENSERS, most sizes..... .10
CERAMIC TRIMMERS, 3-30 mmf. or 7-45 mmf. .35
PADER, For Simple Single or Mini Mac Sets .60
VARIABLE CONDENSER, air type, screwdriver shaft, 15, 25 or 50 mmf..... .40
RECEIVER PLATE COIL, CTC, with adj. iron core .30
Wound for Lorenz, S. Single, Johnson, Mini Mac .55

NEW TUBES. All Types Available—GUARANTEED —lowest prices. All gas tubes.

1S4.....$ .90	XFG-1 $3.20	3D6.....$ .80
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Save C.O.D. fees, include postage, excess refunded.

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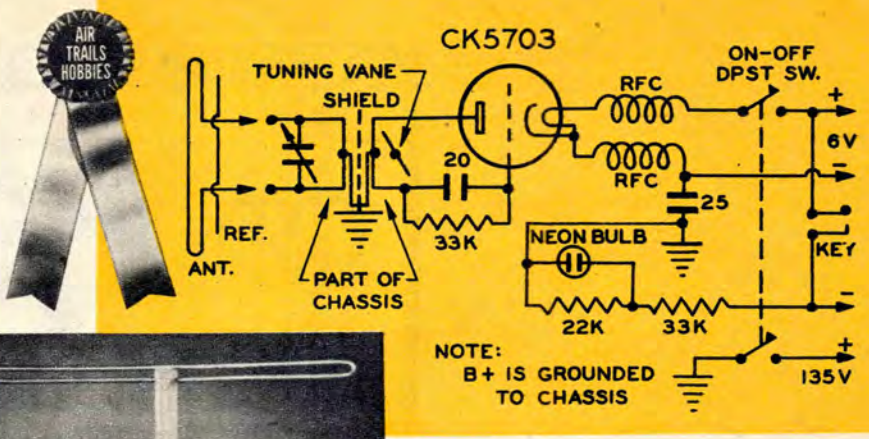
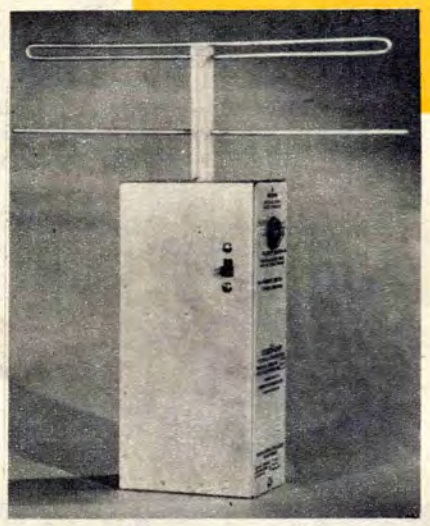




Citizen-Ship 465 mc. "CC" Transmitter & "AR" Receiver

■ This equipment is unique in the radio-controlled field, since it is the only line made for use in the "Citizen's" 465 mc. R/C spot. While operation in the field on this frequency is just about as easy as on 27¼, manufacture of the equipment is another matter—as is the fact that the transmitter has to pass strict F.C.C. regulations, especially as to frequency stability. Because of this requirement, the user is not allowed to do *any* maintenance work on the transmitter—not even to the extent of replacing a bad tube. He can, however, renew batteries as needed.

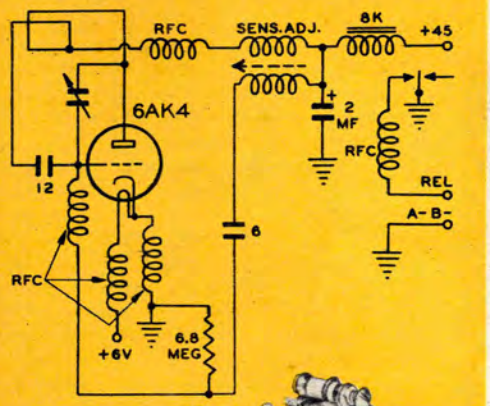
Since the Model AR receiver is the newest thing in this field, we will cover it here; note, however, that the older and larger Model CR is still being made, and is often preferred by those who don't object to its larger size and wish to operate their models at the greatest possible range.

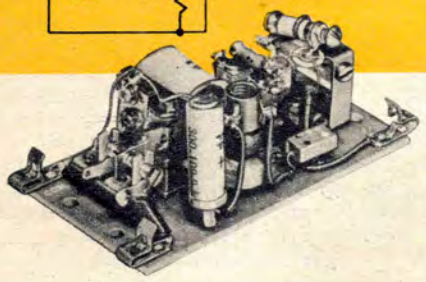
Circuitwise, the two receivers are very much alike, the main difference being that the Model AR does not have the attached loop antenna. Because of this it is much more compact, and has, in fact, been fitted nicely in Half-A planes. No external antenna is needed with the AR, since the associated wiring to batteries and actuator or escapement provides all signal pickup needed. The AR may be mounted nicely by cementing a layer of sponge rubber to the bottom of the bakelite chassis, then cementing the other face of the rubber to a thin piece of plywood. It can also be suspended from the four corners by rubber bands; a small spring-type contact clip for battery and relay connections is mounted at each corner of the base.

The second main difference between the AR and CR receivers is that the former is equipped with a variable capacitor which makes it simple to touch up tuning at the field.

This type of receiver requires considerably more A battery power than those used in 27¼ mc., due to the fact that an entirely different sort of tube is necessary. Even so, it has been found practical to use various combinations or four or five 1.5 V. cells, as explained at length in the instruction booklet. To balance the higher A drain, the receiver is extremely economical on B batteries, and the smallest hearing aid units will give very good life.

The plate current change of both Citizen-Ship 465 mc. receivers is about the same, regardless of signal strength, so it is not necessary to make repeated long distance





range checks. The transmitter puts out very little signal when the antenna is removed, and therefore makes an excellent test signal source for tuning the receiver. Detailed steps on such tuning are included in the accompanying instructions.

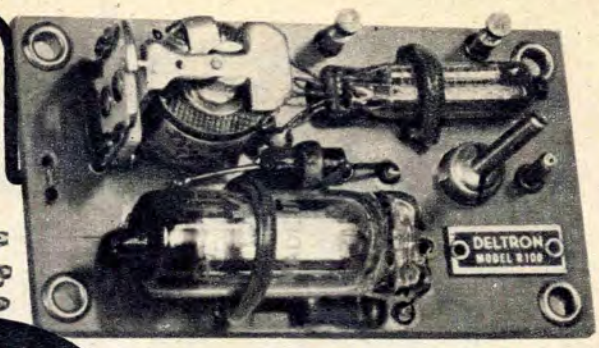
While it is illegal to tamper with the transmitter in any way, we give the circuit here, since it is of real interest to the electronically-minded modelers. Because of the stringent stability requirements, the Model CC transmitter has features not seen in any other R/C transmitters. It utilizes a "faraday shield" between the tuning inductance and the antenna loop to reduce detuning effect, should the antenna be held too near a conducting surface. Also, there is a built-in temperature compensator. Both the tuned circuit and antenna loop are formed by punching out part of the metal chassis, and because of this, the tuned circuit—and B plus—are grounded to case.

The neon lamp on the case is a valuable check on the condition of the B batteries; it will light as long as they are strong enough to work the transmitter reliably.

It should be noted that 465 mc. equipment is increasingly useful nowadays, when every day sees more and more modelers beginning operation on the 27¼ mc. R/C spot; there is no interference between the two, incidentally, and receivers on the two R/C spot frequencies may be operated in the same model simultaneously.

(*Continued on page 83*)

R-100 RECEIVER
Shown actual size:
3"x1⅝"
Weighs less than 2 oz.
including plug



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NEW CIRCUIT gives safe control at great distances. Smaller. Lighter. Rugged-built for long life.

TWIN-TUBE RECEIVER idles at 0.5 mils, which is the first stage. When the transmitter is keyed, the current in the second stage, through the relay, jumps from 0. to 2.7 mils—3-times current required.

EASIEST TUNING. only one adjustment. No meters needed!

COMPLETE, FULLY-ASSEMBLED of new top quality components and thoroughly tested. $24.95

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3 New ATWOOD "POWER-PACKED" ENGINES

SCIENTIFICALLY COOLED
INBOARD
GASOLINE POWERED
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AUTOMATICALLY WATER COOLED by ingenious propeller pickup system, even when boat is not in motion.

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AIR COOL $5.50 // WATER COOL $5.75

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The "Cadet"
The ideal power plant. Smooth running, easy starting. Weight 1 oz. complete.
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SELECTED CONTEST MODELS

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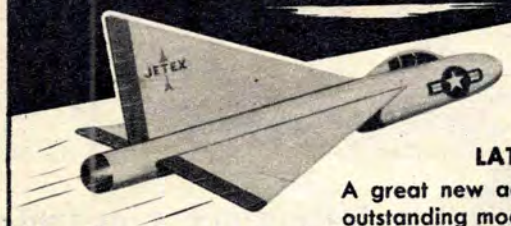
a NEW JETEX MODEL



F-102

SEMI-SCALE MODEL OF LATEST U.S. AIR FORCE JET

A great new addition to the Jetex line of outstanding model aircraft. The Jetex F-102 has the high speed and high performance characteristics of the sensational delta wing prototype made by Convair.
All die-cut balsa wood construction. Easily assembled from exceptionally complete plans. Includes decals.

COMPLETE WITH JETEX #50B JET ENGINE

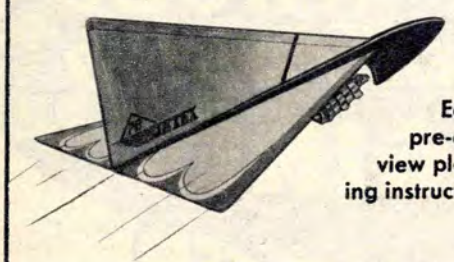
The Jetex F-102 is designed especially for use with the new, improved Jetex #50B engine. AND IT IS SOLD COMPLETE WITH THE #50B.
An outstanding value at only $1.95 complete.

McDonnell F88A "Voodoo"

True scale realism and brilliant performance are combined in this model for the #50B. Kit includes all balsa, die-cut parts and features AEROFORMED* construction for quick, easy, strong assembly. Includes decals and exploded view plans. $1.25

*TM reg.

The Popular ... P-13



The first practical delta wing flying model kit. Can be flown with the new Jetex "Atom" #35 as well as the #50B. Easy to build, thrilling to fly. All pre-cut balsa parts, full scale three-view plans, detailed assembly and flying instructions. Includes engine clip. 60¢.

OUTSTANDING MODELS FOR THE JETEX 50B JET ENGINE

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TORONTO, ONTARIO, CANADA

(*Continued from page* 69)

force the points of contact between the wire and the structure. Do not force the wire into the wood but drill holes for it, which results in a stronger joint.

The McCoy Diesel shown gave me the best Half-A and Payload results, but any other good Half-A engine could be used. The Royal Baby Spitfire tank shown needs only minor alterations to fit the McCoy. Filing off a small flange, a home-made gasket and drilling the tank mounting holes slightly oversize will make it work. If you care to compete in Class A events, a Cub .074 or a Royal Spitfire can be attached to the firewall with wood screws.

You may note that there are no provisions on the drawing for any form of glide turn control. You may use your own favorite method, a tilted stab, a floating tab on the left wing or maybe you prefer, like me, to use 1/16" to ⅛" wash-in on the right wing. I feel this prevents the right wing from "digging in" in a tight power turn. Whichever method you prefer, the model is trimmed to glide smoothly to the left before power is applied. Start the power flights on low power settings and gradually approach maximum power, making minor thrust line corrections until a smooth, fast, right climbing turn and a floating left glide result. Remember the C. G. position is right at the dummy—if you shift engines, be sure the model balances at the same spot.

Aqua-tivities

(*Continued from page* 13)

plastic bag—just in case. Joe said the boat floated a little low in the water, but performed nicely.

Commercial Items. Two new electric motors especially designed for boat use will soon be carried by Polk's Model Craft Hobbies (314 5th Ave., N.Y. 1, N.Y.). Motors are made by Pittman, feature shock absorbing mount, chrome-plated metal parts to prevent rust, have built-in reverse and on-off switch. These jobs are really deluxe in every way, with five-pole armatures and carbon brushes. The larger one is #9002 and sells for $8.50; small one, #9001, will cost $6.50. Polk's also can supply just about every make and sort of marine fitting you may need; they have Sterling nylon props in three sizes—2" for $1, 1⅜" for 75¢, and 1" for 35¢. Also real stuffing boxes that have adjustable packing gland at lower end, etc., etc. Comprehensive Marine Catalog costs 50¢.

Model boatmen have made wide use of war surplus Willard NT-6 miniature 6 V. storage battery, mainly for driving purposes. Some of these batteries have not given very good life—won't hold a charge for more than a day or so. A new supply of these units that have been found to give very good service is offered by Gyro Electronics Co. (325 Canal St., New York 13) for $2.45. For those not familiar with this battery, it measures 3⅝ x 1⅞ x 2⅜" high, weighs 1 lb. 7 oz. filled, has a rated capacity of 2.4 ampere-hours at 2.4 A drain. Like all

(*Continued on page* 82)

more thrust *full h.p.* *less torque*

PAYS OFF IN PRIZES AND SUPERIOR FLYING PERFORMANCE!

TORNADO PROPS WON BETTER THAN 2 TO 1 OVER NEAREST COMPETITION!

Official Daily Mirror Tabulation

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Get a real flying thrill—in your next contest or for pleasure. Mount a TORNADO PROPELLER on your engine.

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Hobby Club Emblems

Active Air-Model Club of Mason City, Iowa

SKY

SQUIRTS

"We are the only active model airplane club in this city," reports Jim Ballard, secretary of the Sky Squirts. "Our officers are Patrick Dougherty, president, and Larry E. Stephens, treasurer. Mostly we fly control line—some free flight. We enter team racing as a group and have one club R/C project underway. Meetings are held every Tuesday night at the local hobby shop. We movie-photo members' flights." Jim's address: 537 3rd St., N.E.

Send your club insignia—with info on your group. ATH will pay $10 for each emblem and report used here. Type data and send only printed emblems—no rough sketches.

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Long Life with care 10 years.

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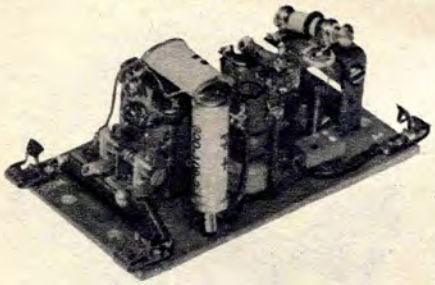

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465 mc Model AR Receiver

for SMALL R/C planes including ½A
Requires only 2½ inch wide fuselage

. . . the new **CITIZEN-SHIP** model AR receiver is similar to the famous CR but has the antenna removed resulting in 70% volume reduction and width reduction of 30%. It has just two simple tuning adjustments allowing it to be TUNED ON THE FIELD. A true value at..... **$24.95**

We are NOT discontinuing 465 mc **CITIZEN-SHIP** model CR receiver with antenna for medium and larger size models . . . guaranteed to fly "out of the box"..... **$29.95**

TRANSMITTER model CC, for use with AR or CR receivers; price less batt.. $39.75

LR RECEIVER model shown

$24.95

LR RECEIVER lowest battery consumption of any available 27.255 receiver..... **$24.95**

LC TRANSMITTER uses 2 tubes for much higher output without extra battery drain **$34.95**

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Good Bros. 4 position escapement....13.50

Bell Crank and Rudder Horn..... **.75**

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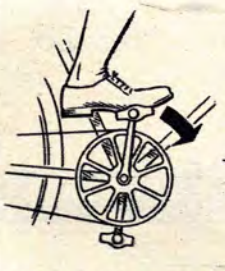
CYCLE CHATTER

Conducted by JOE WEBER with H. A. THOMAS

■ There are two aspects to safety in cycling. First comes the mechanical condition of the machine itself—and this has been discussed in previous columns here—and second is the even more important consideration of safety in handling a bicycle, particularly in traffic.

First off, remember that compared to armor-plated trucks and automobiles the cyclist and his machine are as fragile as a fresh violet in a load of gravel. The cyclist is never in a position to argue the right of way.



"PUSH" PEDAL FORWARD WITH HEEL DOWN —

"CLAW" PEDAL AROUND BOTTOM WITH HEEL UP—

Always abide by normal traffic flow directions. Never pedal the wrong way on a one-way street or down the wrong side of any two-way street.

Zig-zagging, whether indulged in for fun or to facilitate hill climbing, is extremely hazardous traffic-wise.

Hand signals should always be used by cyclists in traffic. Remember that while the cyclist has little mass for visibility as compared with an automobile, he does not have, on the other hand, blind spots or restricted vision in any direction.

Safety habits come with experience in cycling. Be alert, always, for the parked motorist who may fling open a door on the traffic side. This can be disastrous for the rider who may be wheeling too close to the outer edge of the traffic column. Make it a point to keep a safe distance between yourself and the vehicle ahead.

Three taboos to cycling safety are: 1) "hitching rides," 2) "no-handed riding," and 3) "riding double" (unless, of course, it is a legitimate tandem).

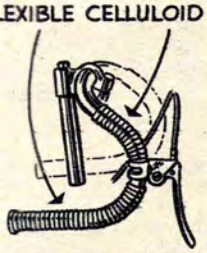
Racing

In cycling for sport an individual may compete against time, against other individuals, or in several forms of team competition. There is massed start racing, track racing; time trials for one hour, 12 hours, 24 hours, etc.; measured distance competition in short sprints or distance runs. And bicycle polo has some following abroad.

A cyclist can train for competition while hacking to and from work. Oftimes the same machine is used with some parts being substituted. For competition, sprint or track wheels and tires replace the daily service type, and such extraneous equipment as lights, saddlebags, fenders are removed unless special contest rules require them.

Perhaps the first bicycle road race in this country took place back in 1883 when G. M. Hendrie defeated W. G. Rowe at Springfield, Mass. Shortly after, in 1885, Thomas Stevens rode a bicycle around the world—a project requiring two years' time. These were the ancient "Boneshakers," "High Wheelers" or "Ordinary" types with huge front wheel and small rear wheel. Small tires were

FLEXIBLE CELLULOID GRIPS



WARM IN COLD WEATHER —
VENTILATED BY GROOVES
FOR HOT WEATHER —

solid rubber and brakes were primitive. These riders had to be not only athletes but acrobats as well, and serious injuries—even fatalities—from falls were not uncommon.

The first "Six Day" bicycle race was held at Madison Square Garden in 1891. "Plugger" Bill Martin rode his high wheeler to victory. But in 1893 Albert Shock won with the new "Safety" type ma-

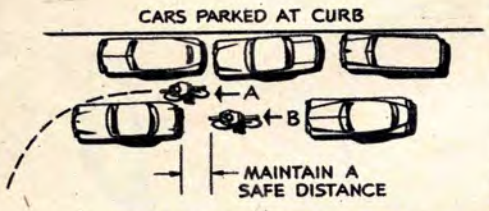
chine and high wheelers faded from the picture. Six Day bike races have not been resumed since the war.

Two recent U. S. cycling records of interest are: Coast-to-Coast, 3200 miles, May, 1953, Marine Corporal Don Mainland, 14 days, eleven hours, 50 minutes; Naval Dental Technician Dick Berg made the same trip in 14 days, 16 hours, 45 minutes. From photographs, Berg's machine appeared to be a lightweight with dropped bars, derailler gears, toe clips and what appeared to be tubular road tires.

Some U. S. Records

AMATEUR

- 1 mile, 1936, human paced competition, Mickey Francoise, time 1 min., 54 3/5 sec.
- 1 mile, 1930, unpaced, Frank Connell, time 2 min., 13 4/5 sec.
- 50 miles, 1946, unpaced, Warren Bare, time 2 hr., 9 min., 28.7 sec.
- 1 hour (time), 1946, unpaced, Warren Bare, distance 23 miles, 378 ft.



POSITION "A" MAKES LEFT TURNS DIFFICULT, RIDER CAN BE SQUEEZED IN POSITION "B" IS SAFER.

PROFESSIONAL

- 1 mile, 1917, motor paced, Menus Bedell, time 1 min., 4 1/5 sec.
- 50 miles, 1929, human paced, Cecil Walker, time 1 hr., 42 min., 7 sec.
- 1 hour (time), 1903, motor paced, H. Caldwell, distance 50 miles, three yards.
- 1 mile, 1941, auto paced, Alfred Letourner, time 33.5 sec., or 108.92 m.p.h.

The utilitarian role of the bicycle in the everyday life of many peoples abroad helps sustain competitive interest. Today, as a result of their persistent work, all the major world marks in cycling are held outside the U. S. We did not measure up in cycling Olympic.

A great many of us can enjoy and benefit from cycling. Fine machines are available to us. It is unfortunate that this hobby—one that will save us money and make us healthier—is being so widely overlooked when you consider its many good features.

AIR NOTES

NAVY Viking rocket built by Glenn L. Martin Co. set altitude record at White Sands, N. Mex. Proving Grounds, reaching a height of 158 miles. Previous record was 136 miles. . . . CONVAIR YC-131C, first military turboprop transport undergoing test flights. Powerplants are two Allison T-56s rated at 3750 hp each.

NEW HIGH SPEED PAINT for jet fighters developed by the British firm Cellon will not peel at transonic speed, can withstand temperatures up to 400° F., is resistant to jet fuels, lubricants and hydraulic fluids. . . . NAVY blimp ZPG-2 established an endurance record, remaining aloft without refueling for 170 hrs., 17 min. Take-off was made from Lakehurst NAS, New Jersey. . . . UNITED AIRLINES inaugurated nonstop coast to coast passenger flights using Douglas DC-7 airplanes. Time between New York and San Francisco will be 7½ hours. . . . BELL helicopters used in Canada for forest fire patrol.

TOMORROW'S supersonic aircraft may be built to last only a short time, according to Dr. George Gerard of New York University's Research Division. Flying at Mach 2, such craft will be subjected to high temperatures that will weaken materials and reduce its life span. Planes strong enough to withstand the heat will be heavy and unmaneuverable. Because of weight problem it may become necessary to design airplanes for limited life expectancy.

U. S. AIR FORCE ordered $18 million worth of mid-air refueling equipment from Flight Refueling Inc. of Baltimore, Md. . . . UNIVERSITY of Illinois has considerably reduced flight training time of students by giving initial instruction in special Link Trainer. Time to reach proficiency is cut in half . . . TWELVE Piper PA-18 135 hp trainers ordered by the Government of Colombia, South America. . . . LONGEST balloon flight on record achieved when an upper atmosphere research "Moby Dick" balloon, launched at Vernalis, Calif. landed 6,250 miles away in Spain, taking 52½ hours and averaging 120 mph. Flight was made at altitude of 37,000 ft., presumably in the jet stream, and was tracked by radar from ground. Moby Dick balloons are 35 ft. in diameter, have often been mistaken for "flying saucers" when sun reflected from their plastic envelopes.

PONTIAC in production of 20-mm aircraft cannon reputed to be the fastest-firing automatic gun ever mass-produced. Actual rate of fire secret, but supposedly greater than that of a cal. .50 machine gun, which fires 1200 rounds per minute. . . . GLENN L. MARTIN Co. in production of P5M-2 patrol flying boat, T-tail, long-hull version of P5M-1 Marlin. . . . SAAB J-29 jet fighter of Royal Swedish Air Force established a new speed record for 500 km (310 mi.) closed course, averaging 607 mph.

POLYTECHNIC Institute of Brooklyn to have a hypersonic wind tunnel in its new Aerodynamic Lab. When completed, tunnel will permit measurement of speeds higher than 7500 mph. . . .

WING SPAN 72" CLASS A-B-C .19 TO .35 ENGINES
The easiest built freeflight on the market today, with a sky-rocket climb and perfect transition from power to a table top glide. A completely new design with phenominal airfoils.

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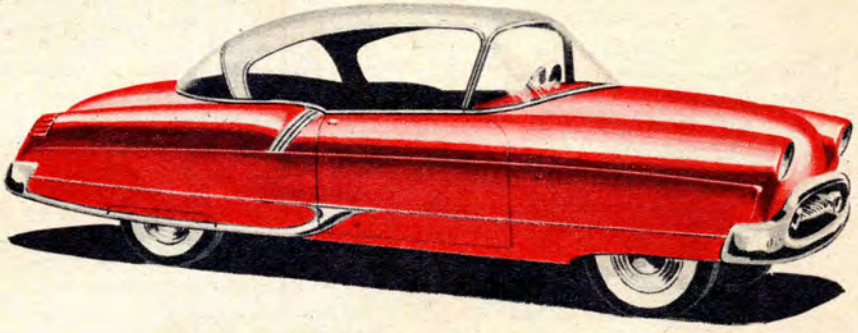
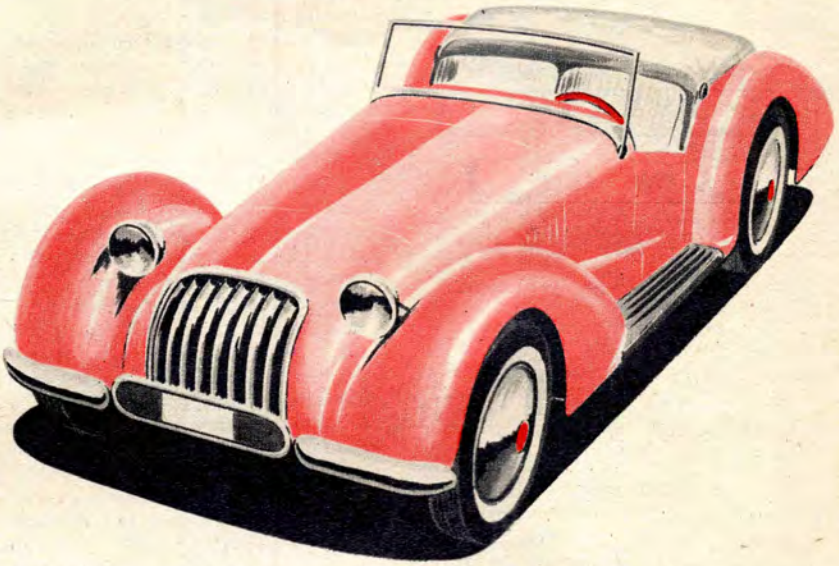
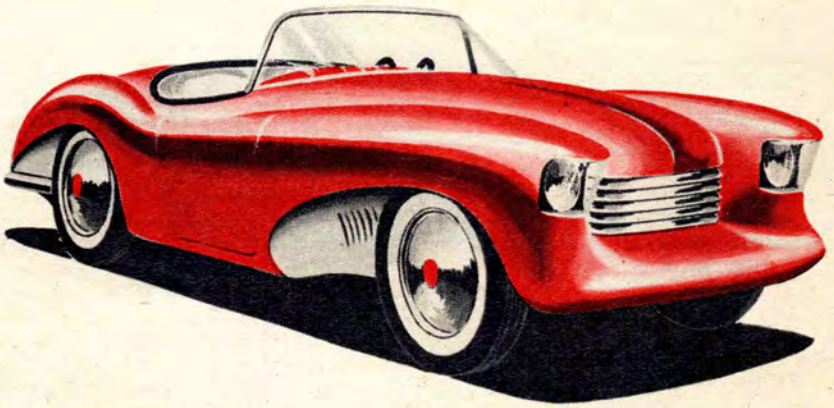
Air Trails HOBBIES
AUTO DESIGN COMPETITION



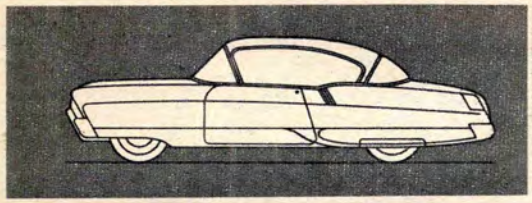




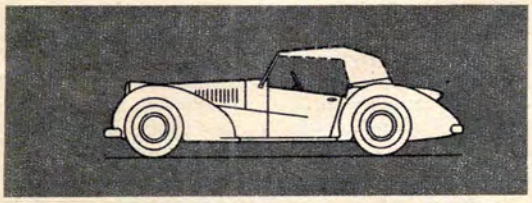
AWARDS OF $50.00—$25.00—$10.00 EVERY ISSUE

Cash awards will be made each issue for the three most significant auto designs submitted to this magazine. $50 will go to the top design, $25 to the second and $10 to the third. You may submit sketches for an original design auto, for a restyled car, for sportscars, family sedans, record cars, hot rods, military vehicles or unusual trucks. Include side, front, rear and top drawings, plus sketches of the proposed vehicle from three-quarter front and three-quarter rear positions. Sorry, we cannot enter into any correspondence about this contest. Send entries to Auto Design, c/o Air Trails HOBBIES For Young Men, 304 E. 45th St., New York 17, N. Y.

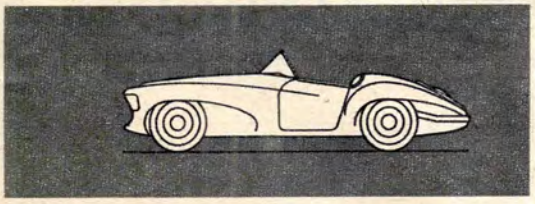
It's easy to enter—see rules announcement!



First prize: two-door sedan by Raymond Wykes of Peoria, Ill. Mr. Wykes is one winner also of '53 Fisher Body Craftsman's Guild Competition. The car has a very harmonious shape that achieves elegance in its simplicity of form. It is thoroughly modern without being gaudy. The front bumper is shaped to form the grille, while the twin exhausts are carried through the rear one a la Cadillac. Type: hard-top convertible with wrap-around windshield and rear window. Interesting is the three-quarter circle steering wheel.



Second prize: custom sportscar by Walter Scarborough of Houston, Texas. The design is based on 1937 Chevrolet coupe or sedan. The Chevvy's body is removed, leaving chassis and fenders. A Ford V-8 engine is installed as well as a '39 Ford floor shift transmission; steering column set back and the headlights relocated on fenders. Hood made of fibreglass, with rest of the body 16 gauge steel. The sloping radiator grille is specially constructed and the entire car reminds you of the 1949 British Allard.



Sport roadster by George Egold, Jr. of Indianapolis, Ind. A blending of European and American styling in which the front treatment resembles the famous Cord while the fender-headlights combination was borrowed from now defunct Graham-Page. The cut-outs in fenders are typical of Italian sport-competition vehicles such as Maserati and Ferrari; they greatly increase the air circulation around the brake drums, thus preventing brake fade. Low unsprung weight achieved with the use of wire wheels.

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by DONALD NIEBAUER

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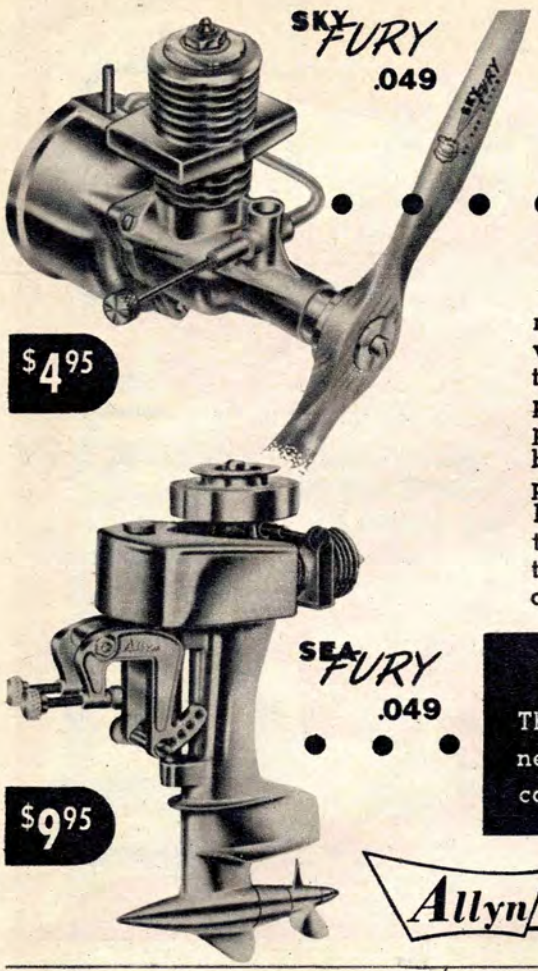

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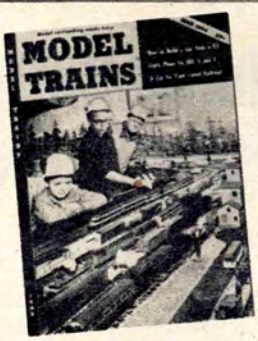

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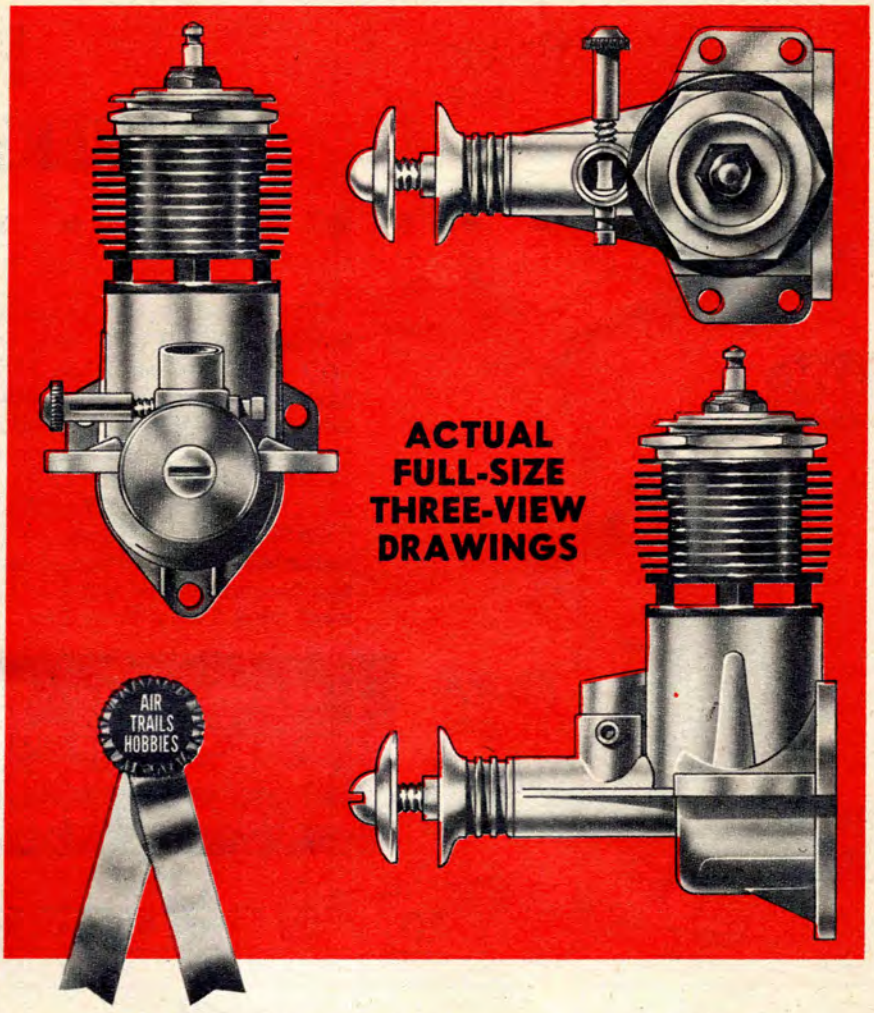

Herkimer Returns to .19 Class With Glow Plug Cub

■ With the introduction of the .19, the Herkimer Tool and Model Works has completely rounded out its line of Half-A and A glow plug engines that incorporate the Brebeck patented porting. From the tiny .039 to the new powerful .19 that replaces the former Bantam, there is a "Cub" with just the right amount of power for any model up to and including Class "A".

In general appearance the .19 looks very much like the popular .14. In fact, radial and beam mounting holes are identical on both engines. This naturally makes it quite simple to add more power to your present .14 powered model. The .19 weighs a mere 2⅞ oz. with a bore of .655 and a stroke of .590. The ⅛ oz. weight difference between the two is so slight as to have very little, if any, effect upon C. G. position.

Internally the .19 incorporates all of the advanced design features first introduced in the .14. The carburetor has a true venturi shape cast on the inside. However, to further improve carburetion, the lower part of the venturi becomes rectangular in shape, to match the slot in the crankshaft. The use of the four intakes and exhaust ports also increases all around efficiency of the design.

However, the big change is in the increased area of the exhaust ports and the short skirted piston. When the short piston comes to top dead center, the lower third (approximately) portion of the exhaust ports is open. In this way, the engine breathes in an extra large amount of fresh air. This extra gulp increases crankcase compression and thereby greatly increases transfer efficiency.

Design and construction-wise the .19 is typical of previous "Cubs." Choice of materials also remains unchanged. The crankcase is cast of aluminum and includes both beam and radial mounts. The back cover is turned from solid aluminum stock and threads to the rear of the crankcase. The crankshaft is machined from steel and is hardened and ground to a smooth finish. Connecting rod is aluminum, and rectangular in cross-section. It appears to be of sufficient strength to stand up well

under normal running loads.

The wrist pin is steel and non-floating, thus eliminating the need for pads which would otherwise be necessary to prevent cylinder scoring. Piston is steel, hardened and ground with a conical top. The cylinder is steel and threads into the crankcase in true "Cub" fashion. The cylinder head is machined from solid aluminum stock and threads into the cylinder. Soft copper gaskets that have proven so successful on all "Cub" engines are again used to provide a permanent seal wherever parts thread together.

In order to get the owner's knuckles at a safer distance from the propeller, an extension type aluminum drive washer is provided. It is press fitted onto the splined end of the crankshaft and is knurled on its face to prevent propeller slippage. Engine's needle valve is typical of previous Cubs—short and blunt. The needle valve body is machined from brass and push-fitted into the intake tube. It is easily removed and may be reversed so that the needle valve may be adjusted from whichever side is more convenient.

The engine used during the test was equipped with a well-fitted piston that required only a half-hour break-in period. It was tagged with both starting and running positions of the needle valve. Both positions proved absolutely correct even though these adjustments were not critical.

Priming directly into the exhaust ports proved the faster method of starting. Using the more conventional choking method required a few additional flips, but either method resulted in exceptionally fast starts.

Performance was above average at all rpm with the engine showing a remarkable ability to run steadily at low speed with a rich needle valve setting. A 9/6 wood free-flight propeller and Cub fuel produced 14,000 rmp.

The Cub .19 is a well-designed engine for all around use. Due to its very light weight it has perhaps the highest power to weight ratio of any engine in its class. It is highly recommended for control line, free flight and radio control models where easy starting and dependability are of prime importance.

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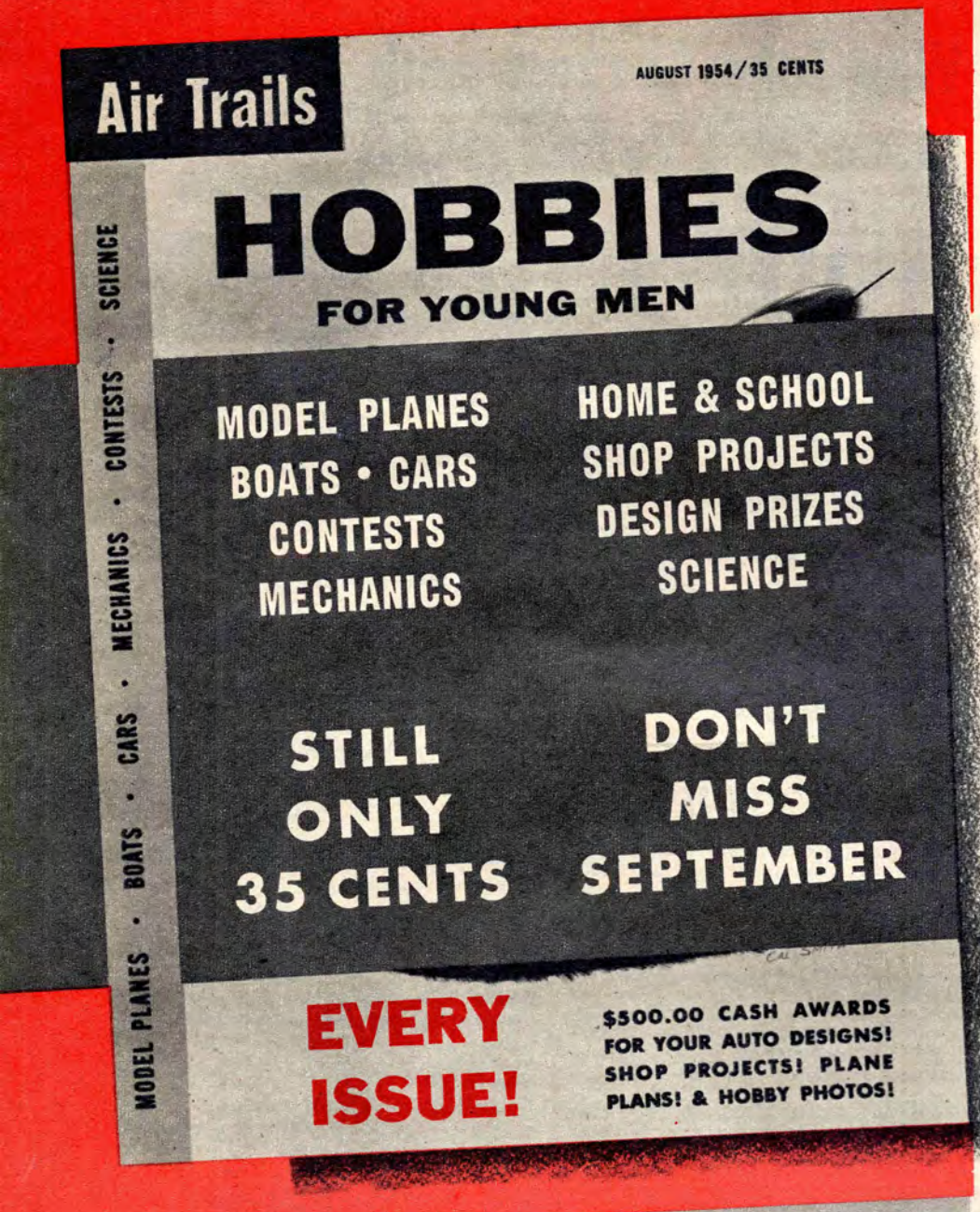

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Aqua-tivities

(*Continued from page* 72)

storage batteries, it will have higher A-H capacity at lower drains, running close to 5 A-H at the usual drains encountered in moderate-sized boats. Lower drain means longer life, too. Battery comes to you from Gyro and all other suppliers dry; you can have it filled by your local storage battery station.

Those who want to build the unusual in model boats should look over the kit for "Swanee", an R/C model stern wheeler that appeared in Air Trails Model Annual. Kitted by Model Aircraft Co. (Box 333, Sta. D, New York 3, N.Y.) and selling for $6.95, the model is ⅔ the size of the original "Swanee," making it 24" long and 8" wide. Still plenty large enough for any drive and R/C equipment you might want to use.

Two new products are available from National Merchandising Corp. (13982 Stroud St., Van Nuys, Calif.); there is a small electric motor which operates on 1½ to 4½ V, measures 1¼ x 1⅝ x ⅞", weighs 3 oz., and sells for $1.25. A "screw set" to go with it contains prop and shaft, stuffing box, flexible coupling, rudder, sells complete for $1.

Round the Track

(*Continued from page* 55)

prominent feature at all model exhibitions, and draw huge crowds to watch the races. As the cars have to follow a really serpentine path, some have been made with steerable front wheels, controlled by the mechanism that holds the car onto the rail. Considerable argument is heard now as to whether this refinement is worthwhile, but it certainly *is* realistic.

The North London Society of Model Engineers is a hotbed of circuit-racing, their track being made in 21 sections, with four 5/16" dia. tubular steel guide-rails. The hard-board track is carried on aluminum angle supports, and the level varies from 6" to 2½' above floor level. One lap measures about 75'. Cars are of both wood and metal construction, and of course, all in the smaller sizes; classes are 1 and 1.5 cc., and it is expected that .5 cc. cars will also be used.

Commercial Comments. Feeling that readers might be interested to learn what is available in the race car line, we checked local sources, and find the following cars or kits are to be had. There are a few McCoy spur gear streamline cars still around, price being $42.50 for the finished car, less engine; this is a teardrop-shaped job with the engine driving the front wheels, and does not, of course, resemble any large car. The McCoy Hotrod does, being patterned after the big hotrods, and it sells for the same price. Both are intended for the McCoy .60 engine.

There is a Cameron Rodzy for $16.95, and this price is for a complete car, with .19 engine.

The Wen-Mac Auto-Mite has a plastic body and is fitted with a Wen-Mac .049 engine. Sells for $10.95 complete.

The O & R scale Offy car is made for $6.95 less engine, or for $24.95 complete with the O & R .29 special race car engine, which has flywheel, built-in gears.

If you want an operating race car at a really low cost, you can get a kit for the Scientific Half-Pint, intended for .049 engines, for $2.95. Has a plastic body, and kit includes everything for the car except the power plant.

All of the above cars are to be had from Polk's Model Craft Hobbies (314 5th Ave., New York 1, N.Y.). Other hobby shops might have a few of the cars that have been made in the past. There are quite a few specials and custom-made cars at present, and we hope to bring these to the attention of our readers. If we have missed anyone in the above listing, we'll be glad to describe his car in this department. We would also like to hear from the makers of custom parts, engines, fuels etc.—anything that will interest the race car gang.

Citizen-Ship

(*Continued from page* 71)

Transmitter: Model CC. Case size 9 x 4 x 2¾". Antenna projects 4" from top of case and is 12¼" wide; must be pointed at the model to get maximum range. On-off toggle switch for batteries, snap-type push-button for signal. Neon indicator pilot lamp. Batteries fit snugly in own compartment, attach by plug and snap clips. Unit takes about one min. to warm up ready for use. Weight with batts. and antenna—4 lbs. Battery complement: B battery—two 67½ V. units (Eveready 467 or equiv.), 135 V. at about 20 ma. with signal on. A battery—one 6 V. unit (Eveready 744 or equiv.), 200 ma. at 6 V.

Receiver: Model AR. Overall size about 4 x 1¾ x 2⅛" wide. Weighs about 4.1 oz., has Sigma 4F relay. Tube soldered in place. Adjustments for RF tuning and quench frequency; latter controls sensitivity. No antenna of any sort required. Relay set to operate at about .5 ma. and open at .4 ma. Heater-type tube takes half minute or so to warm up thoroughly. Battery complement: lightest recommended batteries are four penlite cells for A supply, 6 V. at 150 ma. Five pencells in series will give considerably longer service—will not harm tube. B battery—two 22½ V. units (Eveready 412 or equiv.), 45 V., idling current is .25-3 ma. With signal, current is .9-1.3 ma. Lightest set of batteries weighs 5¾ oz.

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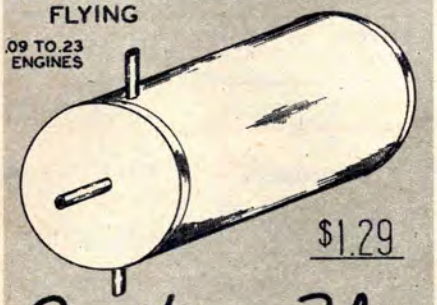

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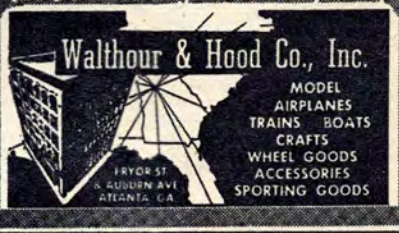

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"Mac 50"

(*Continued from page* 39)

D6-501. C5, C9—15 mmf. miniature variable. C6—50 mmf. ceramic, CRL D6-500. C10—50 mmf. miniature variable. R1, R2—300,000 ohms, ½ W. carbon. R3—Special meter shunt, see text. R4—Special meter shunt, comes with M. R5—10,000 ohm wirewound resistor, Ohmite 5 W. R6—300 ohm ½ W. carbon. R7—12,000 ohm 1 W. carbon. R8—10,000 ohm variable resistor. R9—2 ohm adjustable wirewound resistor with two sliders, Ohmite 1002. Crystal—Petersen Z9A, between 26 and 27 mc. L1—⅜" dia. slug coil form with tap, wound with 17½T #24 en., tapped at 5T, ESSCO. L2—8 turns No. 16 tinned bare wire, 7/16" ID, 13/16" L. L3—2 turns insulated solid hookup wire, 7/16" ID. L4—8½ turns No. 16 tinned bare wire, ½" ID, 1" L., tapped at 2 turns. L5—7 turns insulated wire, ½" ID, close wound. SW1—3 position, double pole rotary switch, non-shorting. SW2—SPST toggle switch. 1 suitable antenna. Decals for front panel, Techni-Cal set #108.

Note: Suitable low resistance replacement chokes for the one that comes in the PE-157 are Stancor C-2327 (preferred, since it is the smallest), Stancor C-2304, Merit C-2994. Heavy-duty aircraft type SPST toggle switch is available from Electronic Specialty Supply Co. 2 volt power supplies—if you don't have a PE-157 or Mac II—may be had from Gyro Electronics Co. and Electronic Spec. Supply Co.

Hobby-Model World

(*Continued from page* 10)

to join, send a check or money order to Mr. Jensen.

Seven At One Time! Been meaning to report on the F.A.S.T. Club's part in the 6th Annual Hobby Show of California which included the flying of four to seven Half-A team racers at one time inside a fifty-foot square cage. For the most part, reported Ron Schuver, the models were flown pretty well bunched together in tight formations simulating closely contested races to the rapt enjoyment of the spectators. There is little doubt that the FAST'ers had as much fun in flying as the onlookers did in oh'ing and ah'ing.

Needless to say, with four to seven fellows all huddled together in the center of a 50 ft. cage struggling to keep their respective ships from tangling, many a hair-raising moment occurred and some mighty fancy footwork—maybe "ballet" even?—resulted. Surprisingly enough, during the entire 10 days no major crack-ups took place, but the perimeter fencing managed to snare a few wing tips and unceremoniously dump some of the little team racers out of the air. All planes are still flyable and their pilots are already looking forward to next year's session.

Ron wrote that the main attraction, at least to those who participated in the show, was the superb flying done by John Brodbeck, Jr., who piloted two Firebabies at one time *in combat with each other!* "This two-at-a-time stuff," recalls Ron, "was done with such precision that it got to be a little old and we all started to heckle Johnny for something new. Well, during the last two days of the show Johnny decided to go Jim Walker one better if he could. No—not four at a time, but something equally spectacular. It would be three at a time

(*Continued on page* 87)

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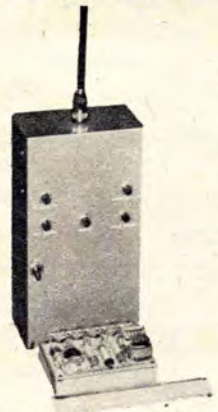

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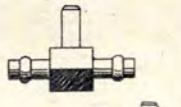

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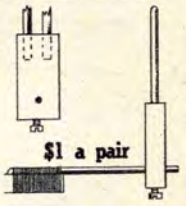

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HOBBY CALENDAR

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Address of contact man is in the same city as site of event unless otherwise specified.

GA—Atlanta, July 10-11. American Miniature Racing Car Assoc. Southern Regionals. Infor from Carl Noward, 1384 Berdan Ave., Toledo 12, Ohio.

MICH—Wyandotte, July 11. Gremlins MAC air-model meet. B. R. Cullin, 2658 Edgmont Rd., Trenton, Mich.

MICH—Detroit, July 11. AMRCA meet. See first listing.

ILL—Chicago, July 11. Prop Nutz air-model meet. P. J. Sotich, 3851 W. 62nd Pl., Chicago 29. REliance 5-1353.

NJ—Hackettstown, July 11. Rotary-Musconetcong Aero-Nuts air-model meet. Kenneth Setzer, 138 Main St.

MASS—Pittsfield, July 11. Exchange Club-Flying Maniacs air-model meet. R. L. Elliott, 48 Curtis Terrace.

SC—Spartanburg, July 11. Amer. Business Club's All-Dixie Championships air-model meet. C. H. Hutchins, Box 403.

TEXAS—Dallas, July 11. Cliff M.C. air-model meet. J. B. Hargis, 1102 W. Saner Ave.

ILL—Joliet, July 11. Exchange Club's flying circus air-model meet. G. F. Stearman, 604 Abe St.

CALIF—Orange County, July 17-18. C.A.P. air-model meet open to all. M. B. Mandell, 7635 S. Wellsford Ave., Whittier.

MINN—Worthington, July 18. W.M.A.C. air-model meet. Duane Odenbrett, 216 13th St.

WASH—Bellingham, July 18. Flying Bee's air-model U-control meet. D. E. Hodges, 2208 "A" St.

NEBR—Omaha, July 18. Kiwanis Club's air-model meet. Carl Ruchte, 5035 Bedford.

IND—Hartford City, July 18. AMRCA meet. See first listing.

WISC—Kohler, July 18. Flying Tomahawks free flight air-model meet. W. A. Lea, 1030 N. 14th St., Sheboygan.

OHIO—Greenville, July 18. Jaycee's air-model meet. Jim Trissel, 215 Wayne Ave.

WISC—Milwaukee, July 18. Flying Electrons R/C meet. Victor Weissbrodt, 2100 E. Webster Pl.

TEXAS—El Paso, July 19-23. Air Force World-Wide model airplane championships. Biggs AFB. Major R. P. Nelson, Information Services Office, 810th Air Base Group, Biggs Air Force Base.

OHIO—Toledo, July 25. AMRCA meet. See first listing.

PENNA—Gettysburg, July 25. Air-model meet by G.M.A.C. J. H. Pitzer, 9 Hanover St.

ILL—Chicago, July 25 Model boat races at Marquette Park.

ILL—Chicago, July 27-Aug. 1. National Championship Model Airplane Meet. A.M.A., 1025 Conn. Ave., N.W., Washington 6, D.C.

CALIF—Elsinore, July 27-Aug. 5. National Soaring Contest with air-model events. L. M. Licher, 767 Haverford Ave., Pacific Palisades.

PA—Bristol, Aug. 1. Eastern States Hydro Championships for model boats, model planes, including radio control. A. E. Abrams, Jr., 1031 Pond St.

ILL—Belleville, Aug. 1. AMRCA meet. See first listing.

PA—Phila., Aug. 7-8. Eastern Model Power Boat Circuit international model speed boat race, Fairmount Park.

WISC—Milwaukee, Aug. 7-8. Experimental Aircraft Assoc. "Fly-in" convention, Curtiss-Wright airport. Midget airplane race. L. J. Kohn, 4952-A N. 54th St., Milwaukee 16.

IND—Evansville, Aug. 8. Junior Chamber of Commerce air-model U-control meet. C. B. Paul, 125 N. W. 6th St.

OHIO—Columbus, Aug. 8. AMRCA meet. See first listing.

PA—Pittsburgh, Aug. 8. Aero Club—PAL Clubs air-model championships. M. J. Thomas, 246 Morrison Dr., Pittsburgh 16.

ILL—DeKalb, Aug. 8. Cloud Dusters' air-model flying circus. Dutch Hess & Dale Hindenburg, 137½ E. Lincoln.

MD—Frederick, Aug. 8. Exchange Club air-model meet. Ike Brendle, 104-A E. 4th St.

OHIO—Cleveland, Aug. 8. Lake Erie G.M.C. air-model A/2 free flight meet. J. W. Grega, 355 Grand Blvd., Bedford.

IND—Anderson, Aug. 11-14. AMRCA Nationals. See first listing.

PA—Pittsburgh, Aug. 15.—Aero Club—PAL Clubs air-model championships. M. J. Thomas, 246 Morrison Dr., Pittsburgh 16.

MICH—Detroit, Aug. 15. Strathmoor M. C. air-model meet. W. E. Bartlett, 14515 Asbury Pk., Detroit 27.

WISC—Waukesha, Aug. 15. Wingmen's annual air-model meet. W. J. Deffner, 839 Gaspar St.

OKLA—Tulsa, Aug. 15. Glue Dobbers U-control air-model meet. W. H. Kehr, 4940 N. Johnstown.

MICH—Detroit, Aug. 15. AMRCA meet. See first listing.

MICH—Detroit, Aug. 21-22. Detroit Radio Control club air-model meet. E. S. Kratzet, 92 Moran St., Grosse Pointe 36.

WISC—Manitowoc, Aug. 22. Air Pirates air-model meet. Don Hoffman, 1028 S. 8th St.

IND—New Castle, Aug. 22. AMRCA meet. See first listing.

IOWA—Waterloo, Aug. 22. Flying Aces air-model meet. M. H. Larrabee, 1901 Springview.

NM—Albuquerque, Aug. 22. Aeromodelers' air-model Rio free flight meet. R. G. Lee, Jr., 2618 Wyoming Blvd., N.E.

TEXAS—Amarillo, Aug. 28-29. Globe-News air-model meet. E. W. Parge, 1919 Cherry St.

PA—Lancaster, Aug. 29. Exchange Club's state air-model meet. Al Geltz, Landisville, Pa.

RI—Woonsocket, Aug. 29. Flying Fools free flight air-model meet. T. W. Wanclawik, 5 John St.

ILL—Springfield, Aug. 29. 150 mile outboard engine boat race. Springfield Marathon Assoc., 2309 E. Linn St.

CALIF—Los Angeles, Aug. 29. Inglewood Flightmasters A/2 free flight scale air-model meet. R. E. Moncrieff, 2108 Santa Fe Ave., Torrance.

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(*Continued from page* 85)

in combat inside a wire cage. This one I don't think genial Jim has tried.

"Anyhow, Johnny fashioned a bit that he could hold between his teeth with which to fly the third plane—and it worked! Now then, picture this, here's Johnny doing the whirling dervish inside a wire cage flying one ship with his left hand, another with his right hand and a third one with his teeth, and amazingly enough, *engaging in streamer cutting with deadly accuracy*. When one of the planes would conk out (it seemed always to be the tooth-controlled job) Johnny would land the dead-engined model as nice as you please, continuing all the while to fly the remaining ships, carrying on with the combat until these, too, ran out of fuel—a really magnificent piece of flying. So chalk up a first for John Brodbeck, Jr., as being more than ambidextrous. He not only flies left-handed and right-handed with equal ease, he flies teeth-handed too!"

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C.A.P., Box 157, Norwalk, Calif.

Quest and Query. Anxious to get pen pal and learn more about U-control flying. Buddy Cawley, 308 Gray St., Danville, Va.

Looking for kit (about 40 inches overall) for shelf model of the famous P.T. boat, also some pictures about 2 x 3 feet. Peter P. Aiello, 1302 South 22nd Court, Hollywood, Fla.

Wants 48 inch Challenger kit put out by Mandix Company. Thinks it would make a good R/C model. We never heard of it. Can anybody help Hector B. Alexander, 703 S. Missouri, Roswell, N. M.?

Wants to contact Tony Wilford, Richard G. Smith and any other members of the Keesler AFB MAC that knew and flew with him—Richard S. McKellon, 4118 Strong St., Riverside, Calif.

D. H. Kim lives in Korea, builds airplane, ship and locomotive models, is 18 and would like to correspond with modelers in the United States. He's now building a 3-foot model of the S.S. United States and a F-51 Mustang. His address is 296 Kong-Duck Dong, Mapo Koo, Seoul, Korea.

We quote: "I am trying to find a pen pal who won't mind writing to a girl. I am just as interested in model airplanes as any boy. I am especially interested in control liners." End of quote from Ellen Stuart, 1403 Stuart Court, Falls Church, Va.

Kenneth Johnson, of Chicago, wants to know if the U.S.A.F. sends out 3-view drawings of aircraft like the Navy issues to modelers. No, Ken, in this case there's no Santa Claus, the Air Force hasn't any free scale plans. The ones the Navy gives out, incidentally, don't cost the service anything—the drawings are provided by the aircraft manufacturers. Too bad the A.F. doesn't follow the same procedure.

Where can he get spruce sticks 1/16 inch square, also 1/16 x ⅛ inch, 16 inches long? Allan Larson, Nemo Route Box 33, Deadwood, S. D.

Searching, searching, searching for one of Cleveland's ¾-in. Gee Bee kits. Anybody got? Lt1S. A. Lindberg, 15th TAC REC Sq, APO 710 %PM, San Francisco, Calif.

Western Round-Up. Model air cars are holding a lot of interest in the Pomona Valley, everyone trying to go the fastest. Cars of all descriptions—one is made up using Minute Maid Orange Juice cans for a body, some use music wire frames, others a Delta body and three wheels, some look like praying mantis—and all in the quest for speed and fun. Fastest time so far is 47.3 mph with a Mac. .049

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CONSOLIDATED B-24 World War II Bomber as detailed flying scale control line model by Frank Lashek and S. Calhoun Smith. Takes 2 or 4 engines; spans 73 inches; is 42 inches in overall length. These are the full size construction drawings.

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ATH-RRP-854

Diesel. Second fastest a Space Bug Jr. Props of the correct size and pitch make a lot of difference; fast run was on a 5/7 Tornado. Fastest run on a glow engine was just 2 tenths slower on a 4.25/7; difficulty in starting the diesel on the light prop prevented runs on the same size prop.

We paid a visit to Dick McCoy recently and saw some very interesting engines. The McCoy .15 diesel is sure a pretty thing, not much larger than the "9." Dick claims that it will "turn more faster" than any engine he knows of. He also had a "9" and "15" glowed but couldn't get the rpm or power out of either that he does from a diesel. He seems to think that the variable compression has a lot to do with this since one can vary with the day. This hard starting is a fallacy when in his hands, and he has even been able to show us how.

Your hand on the compression lever when starting is very important since it allows you to vary your compression to obtain the correct setting as you crank, then when the engine does start, you crank up the compression, trim in your needle valve, your compression again, then back off. Your engine cylinder cools off much faster than the rod, so it shrinks, giving you too high a compression, so back it off a little—it will pick up once released. It's fool proof, too. You guys with Mac diesels that have seemingly lost their power, put in a new "O" ring. This is probably what it needs—ours did.

We ran a new Torp .35 last week. Man, does it have power! A better design and cleaner engineering in construction has allowed K&B to put it out for $14.95. Lots of power for you power-hungry guys.

Jim Walker's new kits are sure slick.

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"Big Chief Sharp Edge" is creation of Arthur Huser, Mt. Vernon, Mo. Art used modelplane tools, blades.

$25 cash award for each trick picture used here. Submit as many different entries as you wish; none should be less than 4 by 5 inches, and preferably 8 by 10 in. glossy prints. We will return all photos submitted but cannot accept responsibility in case of loss or damage. Pictures may be of one-dimensional subjects (people, inanimate objects, cartoon-caricatures, etc.), or can be table-top full dimensional scenes. Amateur and professional photographers stand an equal chance. Keep the subjects humorous and/or unusual.

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MAKE YOUR OWN molds for casting ship hulls, plane parts, etc. You can easily save up to 200%. Instructions, formula and helpful hints for only $1.00. Get a new look on model building. Richmond Enterprises, Box 1003, Augusta, Georgia.

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RECEIVE a ½ Class A model airplane and engine practically as gift. Details 10c. Hobbycraft, Box 104-N, Brooklyn 30, N. Y.

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SAVE MONEY ON ENGINES. Send for free listing of new, near new, and used engines. Big discounts. Will make you long deal on exchange. What have you—what do you want? Platteville Hobby Shop, Box 77, Platteville, Wisconsin.

PLANS

RECEIVERS—3 tube (Reed) 50c; 5 tube superhet 75c; 3 tube tone 25c; 3 channel 50c. Transmitters—5 watt battery 50c; 5 watt mobile $1.00; 2.5 watt tone 50c. Electronic Model Engineering, 6127 Alta Avenue, Baltimore 6, Maryland.

OPPORTUNITIES

TRAIN TO WIN! For the best all 'round training in the world, you can't beat the Army! Learn a good paying trade. Learn self-reliance. Learn leadership. Train to win in the U. S. Army. Contact your nearest Army Recruiter today!

Saw his combat ship which can be assembled in 11 to 14 minutes less wing covering. All parts interlock, plenty of plywood at high stress points and parts smoothly finished; it sure moves when you want it to. Jim's Half-A Carrier Deck job is also slick, goes through its paces in a very workmanlike manner. Two-speed control is slick and positive, allowing very easy landings. Jim recently ran a contest in Los Angeles for flying on long lines. Bill Burge of Duarte was declared "world champion" when he let out his U-Reely for 240 feet of line. Jim cautions that a lot of models break up, however. Jim managed only 210 feet, a piker.

Those of you who have been patiently waiting for Lud Kading to get back in the model game can now stop waiting. Lud left K&B about two years ago and has been running his own machine shop ever since. His first product to be put out under the Circle K trademark of the Kading specialty will be a fuel shut-off timer. This "Tim-it" will feature a die-cast body, Neoprene piston, a positive-acting needle valve, no sponge rubber, a lock wire that cannot relock accidentally, right angle inlet and outlet opening. It has a large shaft to stop bending, comes apart at the bottom, is sealed with an O ring and has a Hycar sealing washer for the plunger. The sample we saw sure looked good.

The Camerons are coming out with a complete line of escapements, compound, boat, simple and motor, in that order. All will have governors where required, that are hardened to prevent wear, will be low drain, be able to handle high power (up to six strands of 3/16 rubber) and will be self neutralizing. Cost on compound will be $8.95. A line of

(*Continued on page* 91)

More Famous Air "Firsts"

ACROSS THE ALPS

1910—September 23. First Crossing of Alps by Airplane. George Chavez, French aviator, crossed the Alps, but was fatally injured in crash landing. From Brig, Switzerland, to Domodossola, Italy.

AIR EXPRESS

1910—November 7. First Air Express Shipment. P. O. Parmalee, a Wright pilot, in cross country flight carried 70 lbs. of "Rajar" silk for the Morehouse-Martens Co. Distance—58.3 miles. Time—59 minutes. Tariff collected by the Wright Co.—$71.42 per lb. From Dayton to Columbus, Ohio.

DECK TAKE-OFF

1910—November 14. First Take-off from Deck of Ship. Eugene Ely, Curtiss pilot, took off from the deck of the cruiser *Birmingham*, flew to Norfolk, Virginia. At Hampton Roads, Va.

DECK LANDING

1911—January 18. First landing on deck of ship. Eugene Ely took off from Camp Selfridge and landed his plane on the deck of the *USS Pennsylvania*. Took off and returned. In San Francisco Bay.

WESTBOUND

1911—September 7 to November 5.—First U. S. Westbound Transcontinental Flight. Galbraith Perry Rodgers flew coast to coast, westbound in 84 hours, 2 minutes flying time. From Sheepshead Bay, L. I. to Pasadena, California. Flew 3,390 miles in 49 days.

EASTBOUND

1911-1912—August 12 to January 10. First Eastbound U. S. Transcontinental Flight. Robert C. Fowler, flying a Burgess-Wright airplane, made cross country flight from San Francisco to Jacksonville, Fla. in 151 days, a distance of 2,232 miles.

CATAPULTED

1912—November 12. Lt. T. G. Ellyson, USN, made first successful power catapult take-off from a barge at Washington Navy Yard.

ACROSS THE ATLANTIC

1919—May 16-27. First Transatlantic Crossing by air. Flying via Newfoundland, the Azores and Portugal, the U. S. Navy flying boat NC-4, Lt. Albert C. Read, commanding, completed the first crossing by air of the Atlantic Ocean. Time—12 days; From New York to Southampton, England.

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Baby Spitfire $.39 ea.
Wasp and McCoy $.39 ea.
O. K. -- $.49 ea.
Spitzy, Royal Spitfire $.49 ea.
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Sensational, Beautiful
ALL PLASTIC

COMET
Sabre 44
READY TO FLY

- Complete with powerful ½A-Herkimer—049B Gas Engine, control handle, control lines and flying instruction leaflet
- Modern swept-back wing jet fighter design
- Molded from durable plastic in 2 colors; transparent cockpit canopy; decal markings and insignia
- In BEAUTIFUL 3-COLOR BOX

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-and the ROOKIE TRAINER, Comets' Great Control Gas Model
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- THRILLS for the EXPERT
- EASILY ASSEMBLED
- For "B" and "C" Engines

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FOR .19 AND .23 ENGINES

Rear view of .19 shows mount ring installed. The three mounting holes are the same spacing as mounting bolts on .29 and .32 engines.

Price $1.00

Also available for the .15 at $.75.

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The most streamlined wheels available today — low drag, light weight. Solid aluminum hubs can be drilled out to fit larger axle if necessary. Available in four sizes.

1" ..... $.15 each 2" ..... $.25 each
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■ One great advantage control line modelplane fans have over their free flight-minded brethren is that few if any U-control models have been known to fly out of sight! But with the radio control, the free flight endurance and the rubber powered model flyers, the biggest worry is that their craft may "go over the hill." If *you* fly free flight craft at least get your name and address on each one. These forms make it easy. After affixing, fuelproof if exposed.

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SEND order and money DIRECT to:
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Hobby Shop Directory

Model Builders! Here's a listing of the nation's leading hobby shops. You'll want to file it away—and when you're in the neighborhood, drop in and browse around. They're expecting you.

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New Location, Larger stock, Offstreet Parking, Same friendly service since 1935.
Open Weekdays 10-6
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PICO MODEL & HOBBY SHOP
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Complete model supplies
Boat Kits Plane Kits
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We specialize in service
GORDINEER'S
STANDARD CYCLE SERVICE
230 Locke St. S. Ph. 2-7367

INDIANA—INDIANAPOLIS (19)
Model Planes, Trains, Race Cars, Motors and Motor Parts.
Boat & Ship Models, Balsa Wood.
10:30 to 7 P.M. Daily
BOB STEELE HOBBY CENTER
1008 No. Emerson Ave. Irvington 1617

KENTUCKY—LOUISVILLE
Model Airplanes—Motors—Race Cars & Supplies. Complete Parts Service. Repair shop with South Bend Lathe.
FISCHER'S HOBBY SERVICE
618 S. Fourth Clay 3213

MASSACHUSETTS—CAMBRIDGE
Model planes, motors, railroads, ships and accessories.
9 to 6 daily and Thurs., Sat. evenings.
CROSBY'S HOBBY CENTRE
1704A Mass. Ave. KI 7-4389

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The most extensive stock of planes, engines and R/C equipment on Long Island.
Your problems are always welcome.
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Model Airplanes, Radio Control, Boats, Trains, Art Supplies. Complete Stock. For beginner and expert alike.
PAUL PLECAN'S HOBBY SHOP
West Village Green LE 3-7379

(*Continued from page* 89)

glow plugs is in the offing.

We have witnessed what is beyond a doubt the perfect R/C boat. Built by Darryl Williamson of Ontario, it is a scaled up "crackerbox." Model is built entirely of 1/8" plywood, has more than ample room for any radio, servo and escapements, each in separate compartments, uses Cameron .15 inboard, water cooled, has a flocked cockpit complete with seats, wheels and windshield. Its attitude on water is the finest yet, taking power as it is applied; like a duck takes to water, it does not change from high to low speed other than to rise higher out of the water. The builder is a craftsman who has applied a lot of common sense and experience—it is really good!

Professionalism comment has reared its ugly head in this R/C sport of ours. We've heard comments at two different contests, both aimed at Howard Bonner. These comments to us have meant nothing more than a left-handed compliment. For our money he isn't a professional, he is a model builder like you and me, he has no particular advantage over any one else, he doesn't clean up at every contest. Howard is just simply another model builder who wasn't satisfied with what he could buy—all in all he built what to him was a "better mousetrap."

He liked R/C flying so much that he studied and passed the ham test. The fact that so many guys wanted his escapement, induced him to set up a small shop. He has contributed a lot to this sport, helping lots of guys when they needed help. . . . Just why "professionalism" is aimed at him we do not know —unless there are some who do not go to the pains to perfect the fine details that he does.

A long-drawn-out, down-to-earth discussion with George Wagner, whose opinion we hold rather highly, brought out the fact that R/C is a costly project. It is. It does cost a little more than free flight, but we venture to say that free flight or U-control costs a lot of guys more money in the long run than most guys spend in R/C.

If we were to have a class for professionals who would be in this group? Perhaps Colby Evett, who runs a model shop, E. J. Brown, who packages wire for U-control models, Dick Sladek who is an aerodynamicist, Dick Baxter, Joe Bilgri, Walt Mooney and lots of others who work for aircraft companies?

Would Dick Korda, Lou Andrews, Bob Palmer, Henry Struck and Carl Wheeley fall in this class, and how about Dick Everett, F. L. Swaney, Mahieu and just hundreds of others? We all like models, some of us derive some money from it—but we all put a lot more back in it. We help youngsters, old timers, too, run contests and in many other ways contribute time and money in keeping this thing going, and none of us is a *cinch* to win any contest. Most of the time we finish high, but this is because we spend more time and money on our models than do others. And it is competition and only competition which keeps us at it day after day, year after year. Professionalism—phooey! If the individuals who spent the time thinking and talking about this subject would just put that effort into their models, then they too could have a better chance to win, Just play the game fair, prepare sincerely and earnestly, then watch out how much easier it is.

Anyway, after hearing those remarks, Bonner decided not to enter at San Diego. The net result was that the sponsors lost an entry fee and the contest had a bitter taste. They had more trophies than entries. Colby Evett and E. J. Brown (two professionals?) fought it out and each won a first and a second, Colby first in precision, Brown first in stunt. Colby's ship is now Fox .59 powered and it really moves.

—DICK EVERETT

Southern Scene. Fred W. Salmon, former president of the Texas Eagles, writes from Korea to say that free flight men are out of luck in that country—at least where he is stationed. Fred reports it is agin' the law over there to fly free flight planes. Says it fouls up the radar, and that the Communists used to tie bombs

(*Continued on page* 97)

KOREAN BATTLE TANKS

Designed From Info and Photos Supplied by U. S. Army Ordnance

USA Gen. SHERMAN 11½" Long

11½" Long
USA PATTEN '48

$2.95 EACH PLUS 25¢ POSTAGE

12" Long
USA T41 'BULLDOG'

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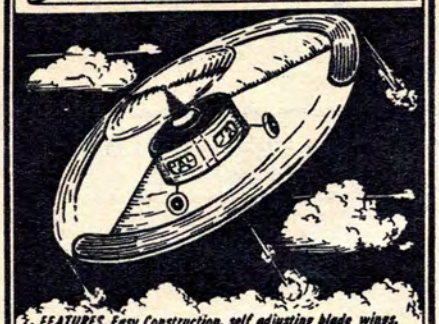

FEATURES, Easy Construction, self adjusting blade wings, Gyroscopic Stability, Fast Starting SPACE BUG Engine

THIS IS A FREE FLIGHT MODEL

EVERYBODY HAS BEEN TALKING ABOUT THEM

NOW YOU CAN MAKE ONE

Easily Rises to a Height of 1,000 FEET
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Full Scale Plans only ..... .50
Construction Kit with plans..... 1.25
Accessories that can be bought seperatly
Engine .049 Space Bug Jr..... 3.95
Propeller ..... .25
Fuel (glow plug) ½ pt..... .60
Leads and Clips for battery..... .50
COMPLETE KIT with all accessories listed $ 6.50

POSTAGE PREPAID

Be the first in your town. ORDER NOW

TIEN HOBBIES
2234 9th Street South
St. Petersburg, Fla.

KAP-PAK

NEW MODEL WHEELS

FROM 15¢ TO 99¢ PER PAIR

PAT. PENDING

32 Numbers to Choose from in 4 Styles-

with All of these Features . . . .

- NO HUBS or COLLARS needed!
- Automaticlly fits any size Axel!
- No tools required!

at all good Hobby shops

Midwest model supply co.
7541 S. HALSTED STREET
CHICAGO 20, ILLINOIS

Planes Boats Race Cars Accessories Engines

HOBBY

Rollfast's new American Flyer bicycle has something unusual in its Bendix Multi-Speed Power Brake which combines the safety of a coaster brake with easy-riding qualities provided by multi-gear adjustments. You shift gears any time while riding and still have foot pedal braking. Tires are U.S. Royal Middleweights, which combine best features of lightweight and balloon tires.

World's largest stamp firm is how H. E. Harris & Co. describes itself. New edition of its "Everything For The Stamp Collector" catalog is free upon request (address: 108 Massachusetts Ave., Boston 17, Mass.). This handy guidebook has helpful articles for beginners: "How to Collect Stamps," "World Famous Collectors," etc. Among the famous collectors: Lily Pons, Ezio Pinza, Gen. Clark.

This is the "Century", a complete hobby workshop by X-acto, combined tool chest, work bench and storage cabinet with more than 150 hobby tools. A whisker under 4 feet high, 27 inches wide, 11¼ in. deep. Blonde hardwood; built-in drawing board; cutting board with mitre. Storage space in base is more than 5 cubic feet. Wooden racks are the basis for the orderly housing of the tools.

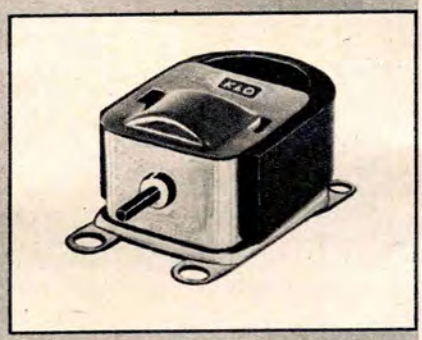
SPECIAL NOTICE!

FOR CONVENIENCE AND SAVINGS—

See advertisement on page 82

SHOWCASE

Small parts storage cabinet is this Swing-Bin by Akro-Mils (820 E. Market, Akron, O., $3.95). The six drawers measure 2⅛ x 1 1/16 x 9½ inches. They swing from a bracket which can be mounted at top, bottom or against the back. Clear plastic drawers have removable dividers; can be removed from bracket for cleaning, or alternated for storing tall items.



Midget electric motor by K&O weighs three ounces, operates on 1½ to 4½ volts and is reversible. Size 1¼ x 1⅝ x ⅞ inches. Nickel-plated and blue finish; $1.25. Also new from K&O is an electric motor screw set that's nickel-plated, has 4½ inch prop and shaft and also includes propeller guard, rudder, universal joint. $1. Motor is #108A; screw set is designated #104B.

This rod-type hack saw blade with 200 teeth to the inch cuts plastics, wood, tubing, etc., in any direction without clogging and without removing the blade. Three styles: coarse, medium and fine; $1.50 for a set of three from Dafile, 1062 College Ave., New York 56, N. Y. With adapters supplied, these English-made "blades" fit any hacksaw. Do not require bearing down to cut easily.

RADIO CONTROL

TRANSMITTER CLOSE-OUT!

A Big Bargain

$21.00 POSTPAID

Crystal Controlled for 27.2 MC, with 3A4 Tube, and 0-50 Milliammeter, Antenna & Control Switch. Completely Assembled.

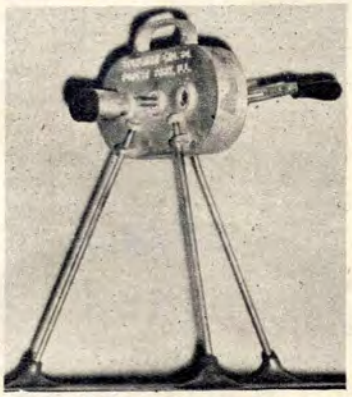
TESTED & GUARANTEED

INSTRUCTION MANUAL

with complete circuits, diagrams & directions for flying model airplanes by Radio Control. *Price Postpaid.* Send for Free Catalogue. 50 CTS.

RADIO CONTROL HEADQUARTERS
Belmar, New Jersey

INERTIA-STARTER FOR MODEL ENGINES



$24.95 Plus Parcel Post For 20 Pounds

Stuhlman Engineering Company
400 DESPLAINES AVENUE
FOREST PARK, ILLINOIS

NINE NEW OUTBOARDS

Chris-Craft's 18' Outboard

Chris-Craft's 17' Outboard

Nine new outboard construction kits now available at all dealers. All an inch to the foot scale or larger. Actual large boat construction, framed hulls planked. Each kit complete with cement, decals, metal fittings, blade, sandpaper etc. Chris-Craft's 21" Monterey Cabin Express Cruiser at $3.95. Chris-Craft's 17' Speed Boat at $3.95, Chris-Craft's 18 foot Express, 18" long at $3.95. Chris-Craft's 14' Hornet runabout, 17½" model at $3.95. The new 16" "APACHE" conventional step hydroplane at $2.95. Chris-Craft's 28' Cruiser, 25' Express, 21' Sportsman, 21' Express now show outboard motor installation as well as inboard. WRITE for literature on 18 boat construction kits —$2.95 to $9.75, sixteen-inch to thirty-five-inch models.

DUMAS PRODUCTS
2114 S. Alvernon, Rt. 8, Box 953, Tucson, Arizona
1954—World's largest manufacturer of power boat kits—1954

MOST BEAUTIFUL OF ALL PROFILES

CIRCUS PRINCE

CIRCUS PRINCE

CIRCUS PRINCE

EASIEST IN ITS CLASS TO BUILD!!!

COMPLETELY PREFABRICATED! 27" Span A-B only $1.95

CIRCUS KING

$2.95

OUR PLEDGE

- NO KIT CONTAINS BETTER MATERIALS!!!
  - ALL BALSA GRADE AAA!
  - HARD BALSA HAND SELECTED FOR ALL STRESS AREAS!
  - TOUGH PLYWOOD PARTS!
  - HEAVY GAS MODEL SILKSPAN
- NO KIT CONTAINS BETTER WORKMANSHIP!!!

P. D. Q. PRODUCTS CO.

KING OF STUNT
A LION TAMER IN 40" CONTROL LINE MODEL; CLASS B-C
COMBAT

P. D. Q. PRODUCTS CO. MILLVILLE, N. J.

HILLCREST
(Brand)

DETHERMALIZER TIMER

All metal. Accurate to plus or minus ten sec. at a five min. setting. Adjustable up to ten min. Built-in 'mousetrap' mechanism will release loads up to ten pounds **$1.75**

FUEL SHUT-OFF TIMER

A small, light, inexpensive Timer for free-flight sport or contest flying. Has pinch tube type fuel valve. Adjustable duration. Made of fuel-proof styrene plastic. 8" fuel line tubing included. Replacement fuel line 25c ft. **$1.35**

R-C BATTERY BOXES

Designed especially for radio control work. Exclusive, coil spring loaded, floating contacts eliminate electrical 'noise' caused by contacts rubbing under vibration. Made of new high impact styrene plastic. Cells are easily replaced.
2-cell Pen. **45c.** 2-cell Med. **45c.** 4-cell Pen. **85c**

TRANSPARENT FUEL TANK

Visible fuel supply. A big help for short r/c test hops. Snap cap filler. Fuel proof flexible polyethelene plastic. 1¾"x1¾"x1¼"..**85c**

FLYING MACHINE KITS

Display model kits of two of the most famous Early Birds. Prefab plastic framework. Tissue covering, 8" span.
Wright Biplane Kit.. **$1.00**
Curtiss Pusher Kit...**$1.25**

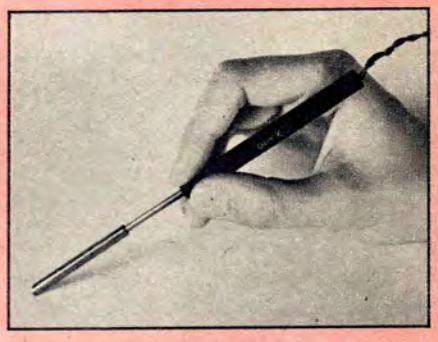
Space limits full description of all these items. See them at your dealers or send a postcard for our new catalog sheet. If you have to order direct add 10c per order for packing and postage.

Dealers–Ask Your Jobber Jobbers–Standard Discount

MODEL PLASTIC PRODUCTS
1695 CORDOVA ST., LOS ANGELES 7, CAL.

HOBBY

Popular priced reflex camera is this new Anscoflex which carries a $15.95 price tag. Takes 12 2¼ inch square pictures on #620 roll. Features double-lens; synchronized shutter for flash shots; shutter lock to prevent double exposures; swing-out spool carrier for quick film loading. Sliding lens panel and viewing hood are connected; one motion opens or closes both lens cover and finder hood.



Weighing only ½ ounce, the ORYX 12 "subminiature" soldering tool is but 6 inches long. No ceramic or mica formers; requires but 20-30 seconds to heat. Available in 6, 12 or 24 volt models; low wattage design permits operation from dry batteries, step-down transformers, auto batteries or model railroad power supplies. $6. Television Accessories, Box 6001, Arlington 6, Va. State voltage.

Handy Tips for Handy Men is 25¢ booklet by the Home Service Dept., Black & Decker Mfg. Co., Towson 4, Md. Even though it contains plenty of ad copy on B&D power tools, it's also a real gold mine of information for the shop fan. Among the "how to's": drill holes in any material; speed up screw driving; power polish a car; hollow grind and edge tools; build a workbench; plus more.

ANOTHER REASON for GOLD SEAL

"We recommend Ohlsson ½A or 200 Glo Fuel. For special high speed runs Ohlsson 2000 Racing Fuel will increase the performance up to 2000 rpm."

So says Bill Atwood in the instruction manual for his aircraft, outboard and inboard marine engines. Peak efficiency and supercharged performance are yours with GOLD SEAL. Get some today at your favorite hobby shop!

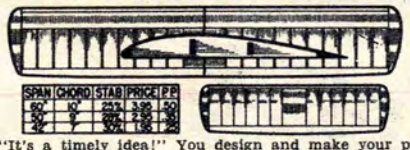
OHLSSON MFG. CO.
LONG BEACH, CALIF.

NEW R/C WHEEL NEWS!!

FOUR NEW SIZES

2½" dia.. $2.00 3" dia...$2.25
2¾" dia...$2.25 3½" dia. $2.50
(Hard Maple brass bushed hubs)
3½" dia. DURAL HUB ... $3.50
Price per pair Postpaid. Singles at half price. Tire-on-Hub Guarantee. Large air volume bouncy tires your best protection.

R/C WING-STAB KITS!!



SPAN	CHORD	STAB	PRICE	P.P.
60"	10"	25½	3.95	.50
50"	9"	20¾	2.95	.35
42"	8"	16¾	1.95	.25

"It's a timely idea!" You design and make your pet fuselage without wasting time on wing and stab. Ribs die-cut. Edges shaped and notched. Try a set today! Please include Postage.

5-1 R/C WINDER

Ever find yourself short winded? 1½" Dia. gear case easily fits in your pocket. $1.25 P.P.
1952 and 1953 YEAR BOOKS can help you very much. Give them a try. $1.00 each. P.P.

JAP TISSUE

Colors: R.Y.B.W. & O. 25 sheets for $2.00 postpaid.

MODEL AIRCRAFT COMPANY
Box 333 Sta. D New York 3, N. Y.

Fly Safely

- IF YOU FLY CONTROL LINE MODELS, don't stand within 500 feet of any power, phone or light lines!
- IF YOU FLY FREE FLIGHT MODELS, don't permit autos or spectators within 500 feet of your take-off site!

MODEL AVIATION SAFETY COUNCIL

SHOWCASE

You'd be surprised how many folks think there's nothing like an old-fashioned type telephone. Proof is the "Lamp Division" of the Telephone Repair & Supply Company, the country's largest independent phone repair shop. Old phones become new lamps. You can get all the data from Daniel H. McNulty at TR&S Co., 1760 Lunt Ave., Rogers Park Station, Chicago 26, Ill.

Decals for trimming your models—planes, boats, cars, etc., are offered by the Consolidated Model Engineering Co. (3087 Third Ave., Bronx 56, N.Y.) About 88 different sheets and designs in many colors sell for 10¢ apiece. Shown here in reduced form are sheets of diamonds, checked squares and skull insignias. Letters are also included, many are available in white for dark surface.

Spray cans with hot fuel-proof dope is the big news at Pactra Chemical Co., where the Aero Gloss line of finishes is turned out. With this new pressure can you just spray on the dope. $1.95; contains 12 ounces. You operate the dope can with a re-usable trigger valve that's yours for 19¢. Pactra points out their Aero Gloss is quickly patched in event that crack-up repairs are necessitated.

NEW! 1" Scale Model Kit
FORD TRIMOTOR

77" WING SPAN FORD TRIMOTOR
WITH CORRUGATED ALUMINUM FOIL COVERING

Here it is, at last! A beautiful scale model kit of the famous Ford "Tin Goose" Trimotor transport plane of the early 1930's. True 1" to 1' scale, with a wing span of 77" and over 49" long. Designed for single or multi-engine operation. This outstanding kit features: Easy to follow, beautifully drawn 34" x 54" (two sheets) plans, semi-pneumatic rubber tired wheels. All balsa skin stress construction. Scale size decals. Best quality balsa wood. Hardware motor mounts, celluloid, etc., and many other Scalemaster features including many pre-cut parts. Designed to take most engines .19 to .60 cu. in. disp. Sold to you direct with an **UNCONDITIONAL MONEY BACK GUARANTEE.** Order this kit today, for scale, sport or contest flying, complete postpaid only, **$20.00.**

FREE CATALOG

Have you seen our big catalog showing our complete line of famous airplanes? Write for your free copy today. Our new line of 1/2" scale kits of modern "Jets" are included and ready for delivery.

Scalemaster Model Co.
P.O. Box 2220 Grand Rapids, Michigan

NOW THE VERSATILE
RITE-CONTROLLER
Yes, the control box you have dreamed of using.

CONSIDER THESE OUTSTANDING FEATURES

* 360 Degree velvet stick control
* Automatic self-centering
* EXCLUSIVE EASILY INTERCHANGEABLE ADD-A-RITE plates enable you to use almost any control system such as:
* 100% TRUE SINGLE OR *DUAL* SIMULTANEOUS PROPORTIONAL control with a single escapement, on one channel!!! No escapements gadgets needed.
* ACTUATORS
* Even multi-tone/channel servos!!!
* AND other systems.
* Not an electronic box.
* Built for fool-proof use to last for years.
* Complete with 10' heavy duty cord and plug.*

Get a RITE-CONTROLLER now for the contest season. Order direct. ONLY $17.95 complete with 3 ADD-A-RITE plates, postpaid with prepaid order or C.O.D. Money back guarantee.
* Or 10', 5-wire cable for multi-tone/channel systems. Patent applied for.

RITE-CONTROL SPECIALS

Actuator 1.6 oz., rotary solenoid type, rugged, ball-bearing, powerful. Can easily move large surfaces. ONLY **$2.75**
Aluminum spot welded cabinet with cover. Large size 9"x7"x7" high. Excellent for X'mitters, Utility case **1.95**
Storage Battery 36 volts miniature..... **1.95**
Sigma 41FS, 10,000 ohms, S.P.N.O. with a.f. choke, thermostat, neon lamp, resistors, etc.....All for **1.95**
Sommerhoff's book on radio-control. Special..... **3.25**
Free bonus with all orders. Include postage, excess refunded.

RITE-CONTROL CO.
Box 37 Williamsburg, Brooklyn 11, New York

THE VERY FINEST FOR RADIO CONTROL

"LIVE WIRE"

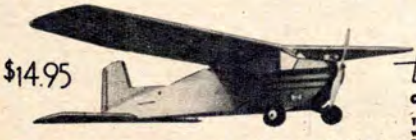
The name that signifies the PROVEN BEST for all R/C flying.
Only with Live Wire Models do you get all of the Superior design Features!

$6.95
THE "TRAINER" .08-.15 ENG.
THE WORLD'S MOST POPULAR R/C MODEL!

NEW!

LIVE WIRE "Cruiser" $3.95
dmeco's NEW REALISTIC RADIO CONTROL MODEL!

Typical of the Live Wire models is the Cruiser. Its well balanced design provides extremely realistic flight with fine wind penetration and great weight carrying ability. Construction is simple and rugged. Exclusive is the removable R/C unit. Live Wire kits are complete with finest A1 materials, precision finished ready for assembly. Plans are full size and include instructions for building, radio installation and flying. All necessary hardware is given including R/C bellcranks and horns.



$14.95
THE "SENIOR" .19-.23 ENG. CUSTOM BUILT

FREE FLIGHT

$2.95
1/2A
THE "CLIPPER"

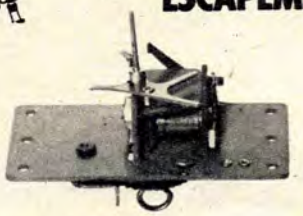
THE "KITTEN" R/C

PRODUCTS OF
THE DE BOLT MODEL ENGNR. CO.
WILLIAMSVILLE, N.Y.

It's the Time to See

the new **Cameron** Only **8.95**

Self-Neutralizing COMPOUND ESCAPEMENT



FIRST TIME EVER OFFERED

...This unit is built for simple, reliable, trouble free operation with a single channel radio.

...It provides fully selective control–giving the control desired when desired–without the necessity of following a sequence.

...Besides proving selective control of right rudder–left rudder–or neutral rudder, etc. the unit also operates auxiliary control of auxiliary equipment such as motor speed control, elevator control, etc.

...It features very low battery drain coupled with exceptional power range for operating large or multiple control surfaces.

MANUFACTURED BY

CAMERON PRECISION ENGINEERING CO.

CHINO, CALIFORNIA

DARWIN DELUXE ALL METAL ADJUSTABLE CONTROL HANDLE

NOW, no more need to have 2 or 3 handles. The Darwin all-metal all-span handle is versatile enough to fly ½ A, speed, sport or stunt at a span of your own selection. Easy adjusting mechanism locks secure and will not fray cable.

$1.25 each

DARWIN SHAKE-PROOF TANKS

PW	Series	$ .50 ea.
B	Series	.75 ea.
S	Series	1.00 ea.
L	Series	1.00 ea.
M	Series	1.00 ea.
A	Series	1.00 ea.

Special No. 0, 1-oz. for Team Racing $1.00 ea.

28 different sizes from sizes from .014 oz. to 5.1 oz., ½ A to Class D. Constructed completely of fuel-proof brass.

Tanks may be cemented into your plane, will not leak or the tubing shake loose.

See the complete line on display at all dealers.

DARWIN MODEL AIRCRAFT COMPANY

2430 Tremmel Avenue Ann Arbor, Michigan

The Last Word on HOBBIES

■ One question often asked of us is, "How do I go about getting a construction article on my model in your magazine?" This seems like a good time to pass along some information on that subject.

First, we want to say that almost all designs for model boats, cars and airplanes which appear in this publication are by free lance contributors. We have no salaried designers on the staff. Because of this we always welcome ideas, suggestions, or proposals from readers for hobby-model plans and articles.

Let's say you have a scale model whatzis (could be a car, a boat, a plane—anything). You'd like to offer it to "ATH." How do you do it? Best thing to do is to send us some pictures of the model—they should be clear, sharp and show it off to its best advantage . . . something bigger than snapshots, too. Preferably 5 x 7's or 8 x 10's. Tell us how the model performs (if it is a working model), what scale references or drawings you worked from (if it is scale), what materials the model is made from, how it is constructed and what kind of full-size working drawings you have (pencil sketches, rough ink drawings, blueprints, etc.).

Supposing the editors like your craft—what next? Well, they'll ask you to submit detailed actual-size working drawings, professional-type photos and a typewritten article about yourself and your model. Which brings us to the second most popular question: "How much do you pay for model articles?" That depends upon the complexity of the model, its contest record (if applicable), how much special research and construction effort went into it, and so on. Generally speaking, prices range from $35 to $200. The average is probably around $150. The $35 might be for a very simple glider model for the novice flyer; the $200 might be a radio controlled boat of especial interest.

Acceptance prices vary from model to model and depend largely on the quality of the available photos, the completeness of the manuscript, and the accuracy of plans. An inaccurate pencil plan, for instance, may require considerable checking by the draftsman who does the finished inked drawings. That means additional expense to us in preparing the article and that is sometimes reflected in how much we can pay an author-designer.

—Al Lewis

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While every precaution is taken to insure accuracy we cannot guarantee against the possibility of an occasional change or omission in the preparation of this August 1954 index.

SUPER SPEED... by Berkeley

$4.95

$2.95

SUPER WHIRLAWAY "A-B"

For .19 to .29 Engines—12½" Wingspan

MINI WHIRLAWAY "½A"

For .049 Engines—8¼" Wingspan

Each Kit Contains:

- Formed Aluminum Wings
- Carved and Hollowed Body
- Jim Walker "U-Control"
- Plywood Tail Assembly
- Shaped and Drilled Bonnet
- All Necessary Hardware
- Full Size Detailed Plans

Designed by: Bob Elliot

The "Mini and Super Whirlaway's" are Berkeley's newest competition speed designs. Minimum frontal area, light weight design, correct angular set-up, balance and area, plus mirror-smooth aluminum wings combine to give you a design that flies fast low and level.

buy BERKELEY at your local dealer!

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.

(*Continued from page* 91)

to the little free-flight jobs and fly them across the lines. Another angle on PAA Load, opines Fred! He reports that there is a hobby shop on his Base, but it carries only basic supplies! Tests showed that Japanese fuel proofer isn't fuel proof at all! Supplies being so scarce, fellows like Fred who continue to build and fly under these trying circumstances sure deserve a lot of credit.

Fred got together with Jack Musel, whom he used to fly with at Keesler Air Force Base in Mississippi. These fellows, free flight men, have been getting a kick out of some combat flying and have done much to popularize this event in their location in Korea. Fred says "good luck" to all you fellows he has met at National events.

More news from overseas! John Simms writes from another Base in Korea giving us some news about some of the fellows and their model troubles. First, Duane Hyer from San Francisco, formerly a member of the S.F. Vultures. John says that this man Hyer eats, sleeps and breathes model airplanes, and lets no obstacle, no matter how great, daunt him. For example, he equipped a Class A free flight with skis and was desperate to get it flown before the snow melted. The fact that there was no fuel available didn't bother Hyer. He mixed some lighter fluid, vodka, and rifle oil. Says it worked fine! He designs his own free flight ships and since no stock balsa or Silkspan or rubber is ever available in his area, he buys several U-control kits, which provide him just enough balsa for a single Half-A model.

"Originality and ingenuity" is his motto, and it is easy to see that he puts this motto into practice in some of the weird contraptions built from just about nothing. For example, cardboard for ribs and formers—stripped fruit crates for longerons—bond or onion skin paper for covering! Simms says that Hyer is undoubtedly the most persistent modeler he has met overseas.

Word also about Jack Rhodes of Cleveland, Ohio. He's a U-control addict and has been trying to organize a contest in his division area for several months, but can't get the necessary cooperation from Special Service officers. (Simms says he hears this complaint everywhere in his area.)

William Miller, from Detroit, is doing quite a bit of experimenting in Korea with canard rubber models. All of his work is on small scale, about 18 to 24 inch span. Again no balsa available, but he gets some remarkable flights. His best time has been 3½ to 4 minutes R.O.G. in dead air. He doesn't use dethermalizers and so is reluctant to fly before 5:30 p.m. His props fold forward along the fuselage sides; he uses fixed nose blocks and winds from the rear. Polyhedral stabilizer and poly wings with a flat center section about 35%.

John Simms in giving us this news comments as follows: "Miller speaks softly and with a faraway look in his eyes about a Canard Wakefield." "Heaven help us!" says Simms. Stick it out, fellows. Look forward to the day when you'll be back home with a well supplied hobby shop near you. Simms tells us also that the Stars and Stripes recently came out with a big article about monthly contests at the Air Force Base in Taegue. Two-day affairs with a free flight, rubber, speed, stunt, and flying scale event. It seems like the Air Force realizes the value of model building and flying and encourages it even in far-away Korea.

—R. H. ELLIOTT

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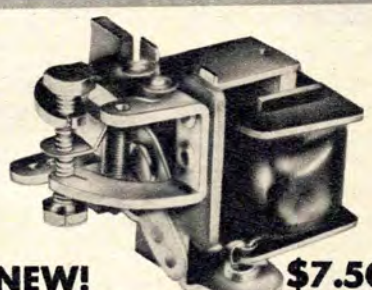

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